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RACIAL CRISES IN THE ARMY: PREDICTION, PREVENTION, AND INTERVENTION

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) <p>A theoretical model of racial climate in the Army was developed to help military leaders predict, prevent, and if necessary intervene in racial crisis situations. The conceptualization of the model was supported in subsequent field investigations of soldiers' perceptions of the racial climate at their installations and their opinions regarding effective command strategies for alleviating racial tension. Soldiers' perceptions of racial climate were validated successfully against certain records maintained in company files.</p> <p style="text-align: right;">(Continued)</p>														

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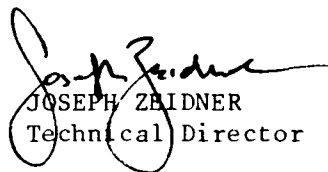
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FOREWORD

Beginning in 1972, ARI performed a multifaceted research program in support of the Army's Equal Opportunity Program. Among the concerns of Army leadership in the early 1970s which the program responded to was an increase in what this report defines as racial crises, at Army bases both in CONUS and abroad. This generated a research requirement for the development of a management tool that commanders could use to attempt to predict such occurrences.

The research reported here was initiated in 1973 and completed in 1975. Additional research support was required to finalize the computer simulation portion of the research, but with the reduction in the frequency of racial crises in the Army, as well as budget limitations in the EO Research Program, the finalization of the project was delayed. Recently, in response to increased interest in the potential utilization of the computer simulation model as an Equal Opportunity training device for company commanders, the project was completed by ARI in-house personnel.


JOSEPH ZEIDNER
Technical Director

RACIAL CRISES IN THE ARMY: PREDICTION, PREVENTION, AND INTERVENTION

BRIEF

Requirement:

To develop a model to predict racial crises should they arise and to teach leaders how to recognize signs of impending racial crises and intervene effectively to solve these problems.

Procedure:

A theoretical model of racial climate in the Army was developed, and survey measures related to this theoretical model were developed later. Survey measures of racial climate, composed of perceptual measures, were labeled primary indices of climate. Secondary indices of racial climate were considered to be Army records of adverse administrative actions like Article 15s. Data were collected at five Army installations. These data generally supported the theoretical model of racial climate that had been developed. The computer simulation was then developed, based on the field data, as an aid to Army leaders in teaching about events that precipitate racial crises, and as an aid in teaching the effectiveness of a variety of interventions.

Findings:

One important finding related to differences of opinion between enlisted soldiers and the unit leaders about the prevalence of good or bad racial climate. The primary dimensions of racial crises, labeled racial solidarity, racial hostility, and erosion of command authority, tended to be validated. Data were collected on the effectiveness of a variety of intervention strategies on racial climate as measured by the primary dimensions given above. From these data, the computer simulation was written to help commanders understand the dynamics of the command intervention strategies as they affect enlisted soldiers' perceptions of racial climate. Command understanding may in turn increase agreement and positive racial harmony.

Utilization of Findings:

As indicated above, a computer simulation is available from ARI to assist company-level commanders in understanding how to effectively improve racial climate and to reduce racial crises if they should arise.

RACIAL CRISES IN THE ARMY: PREDICTION, PREVENTION, AND INTERVENTION

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RACIAL CRISES IN THE ARMY: PREDICTION,
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OVERVIEW

This report presents the results of research conducted over a 2-year period to assist the Army in its efforts to deal effectively with potential racial disruption among Army personnel. The principal research objective was to develop a model of racial climate that would aid military leaders in predicting, preventing, and intervening if necessary in racial crisis situations. A theoretical model of racial climate was developed and then empirically tested in the field at several Army installations. Following several refinements and extensions of the model based upon field test results, a computer simulation was conducted to display the application of the model in hypothetical situations characterized by the presence of racial tension.

A major premise of the racial crisis model is that soldiers' perceptions of racial climate are closely associated with the likelihood that racial disturbances will take place. Accordingly, it was hypothesized that as soldiers' perceptions of existing racial climate become increasingly unfavorable, the possibility of serious racial incidents also will increase. This working hypothesis guided both the conceptualization of the crisis model and the methodology for field investigations.

Two survey instruments were developed to test the conceptual model. A Soldiers' Perceptions Survey asked soldiers for their opinions on the existing racial climate at their installations in terms of their perceptions of certain events. The survey also asked soldiers to estimate the effectiveness of certain command strategies that could be employed to alleviate racial tension. An Inventory of Company Status requested information from records maintained in individual company files for use in corroborating soldiers' perceptions of existing racial climate and to permit the crisis model to be formulated in terms of actual recorded data that company commanders might use to monitor the level of racial tension among soldiers in their command.

The results of field investigations and several data analyses led to the following major conclusions.

1. Soldiers' perceptions of existing racial climate can be reliably and consistently measured using the racial crisis model. These perceptions can be grouped into four conceptually distinct classes of perceived events which the model presumes contribute to a negative racial climate:
 - a. INTERRACIAL HOSTILITY--characterized by perceptions of open racial hostilities among Army personnel as evidenced by the display of racially offensive symbols, the occurrence of racially motivated fights, unfair treatment at post facilities, and other related incidents.
 - b. EROSION OF COMMAND AUTHORITY--characterized by perceptions of a general negative state of unit morale regarding command

fairness in giving promotions, handling complaints of discrimination, making duty assignments, administering punishments, etc.

- c. COMMUNITY HOSTILITY--characterized by perceptions of unfavorable conditions in the surrounding community, such as a lack of suitable off-post entertainment and the existence of discrimination against soldiers and minority group personnel at off-post facilities.
 - d. RACIAL SOLIDARITY--characterized by perceptions of racial group cohesiveness reflected in the extent to which soldiers of different backgrounds associate with one another on and off post, have common interests, have close friends of different races, etc.
- 2. Soldiers' perceptions of racial climate are systematically related to data kept within Army company records regarding company strength and racial composition and the incidence of certain administrative punishments. Accordingly, company records are a potential source of information which can be used by company commanders to assess racial climate on a company basis.
 - 3. Command strategies for preventing or alleviating racial tension are perceived as differentially effective for different kinds of racial tension as defined by the racial crisis model. Thus, no single strategy or set of strategies can be considered uniformly effective under all circumstances.
 - 4. The perceptions of officers and enlisted men differ appreciably with respect to the sources of racial tension. Officers tend to ascribe the sources of racial tension to factors outside of their control, while enlisted men see racial tension as implicating the chain of command. Officers additionally view the impact of various command strategies upon racial climate differently than do enlisted men.

Following the empirical investigation of the racial crisis model, the model was simulated on a computer using the empirically obtained data. A principal objective was to exhibit the differential effects of various command strategies on racial climate according to the racial crisis model. Although the computer simulation of racial crisis events was necessarily hypothetical, it successfully demonstrated the anticipated interaction of events perceived to characterize racial tension and the impact of various strategies for alleviating such tension. The product of the simulation was a conversational computer program designed to be operated from a teletype terminal by personnel with no computer experience. The usefulness of this simulation device was seen in its potential for training Army personnel with respect to those factors likely to be associated with the potential outbreak of racial hostilities.

The implications of this investigation mainly pertain to the potential use of the racial crisis model and its computer simulation for purposes of training Army personnel. Given differences in the perceptions of officers and enlisted men regarding the sources of racial tension and the impacts of

different corrective strategies in reducing such tension, it would appear to be useful for individual Army leaders to learn in what ways their assessment of racial climate differs from that of men in their command. The computer simulation also could be extended to incorporate both a greater range of potential strategies for dealing with racial tension and the estimated effectiveness of these different strategies by personnel of different ranks and ethnic backgrounds, for instance by company commanders who are members of minority groups. It may be that the impacts of various corrective strategies are perceived quite differently by these different groups of Army personnel.

INTRODUCTION

Purpose

The Army is committed to the belief that an effective military organization cannot exist within an atmosphere of racial tension and disharmony. Accordingly, the Army has instituted a number of specialized programs and has adopted certain regulations specifically designed to promote racial understanding and insure equal opportunity and treatment for all its personnel. In addition, the task of promoting favorable race relations has been established as a primary leadership responsibility at all levels of the chain of command.

In the past few years, there have been instances of racial hostility at various Army installations, and the Army is interested in forestalling the possibility of disturbances in the future and in eventually eliminating racial hostilities altogether. To accomplish this goal, Army leadership faces the difficult task of learning what events signal the outbreak of racial disturbances, what preventive actions are likely to be most effective, and what intervention strategies should be employed if and when such disturbances take place.

The purpose of the present study was to assist the Army in being able to anticipate and deal effectively with racial disruption among Army personnel. The principal objective was to develop a model of racial climate which would aid military leaders in predicting, preventing, and intervening in racial crisis situations. The intention in developing this model was to provide unit commanders with a practical means of determining the level of racial tension among unit personnel and to identify appropriate command strategies which could be employed in racially tense situations if warranted.

Summary of Phase I Research

The research project was conducted in two phases. During Phase I, a theoretical conceptualization of the racial crisis model was developed and empirically tested in the field. The conceptualization of the model and the results of the subsequent field investigation are summarized in this section. A more detailed discussion of these topics (including a literature review and

descriptions of racial problems faced by the Army in the early 1970s) was presented in an interim report.¹

Development of the Racial Crisis Model

The racial crisis model was developed on the premise that the likelihood of major racial disturbances in the Army is closely associated with soldiers' perceptions of racial climate. A basic assumption for the model was that as perceptions of racial climate at a given Army installation become increasingly negative, the frequency and seriousness of racial hostilities are likely to increase. An added assumption was that major racial disturbances, rather than being a unique class of events, represent an extreme upper limit of the dimension of racial climate. Accordingly, the model was designed as a means of assessing the degree of racial tension in an Army unit as evidenced by perceptions of racial climate in order that appropriate command strategies might be employed to alleviate high levels of tension and thereby reduce the possibility of serious racial violence.

The first stage of model construction involved the delineation of those variables or conditions likely to be indicators of negative racial climate prior to the outbreak of serious racial incidents. Following a survey of the literature and an inspection of data from three preliminary site visits, five major variable classes were identified which could be presumed to either contribute to or be necessary for the development of negative racial climate. These five variable classes became the basic working components of the racial crisis model.

The first of the identified variable classes, external environmental conditions, referred to the existing social and physical environment surrounding a military installation. Variables thought to typify this variable class included perceptions of the availability of off-post housing and recreation and perceptions of discrimination against soldiers or minority group members at off-post sites. It was hypothesized that as soldiers' perceptions of external environmental conditions become increasingly unfavorable, the degree of negative racial climate and hence the probability of severe racial disturbances will increase.

The second variable class, racial solidarity, concerned the extent to which soldiers of separate ethnic groups identify with one another on the basis of race. Variables indicating the degree of racial solidarity were seen to include perceptions of preferences to perform group activities with soldiers of the same race, the extent to which soldiers have friends from different ethnic backgrounds, and other such variables. It was hypothesized that the perception of high group solidarity with racial groups could be a necessary precondition of negative racial climate and hence would increase the probability of major racial disturbances. This hypothesis was developed from the

¹Decker, M. C., & Wiggins, R. V. Racial crises in the Army: Prediction, prevention and intervention. Interim report prepared under contract DAHC-19-73-C-0045 for the U.S. Army Research Institute for the Behavioral and Social Sciences. Washington, D.C.: Lawrence Johnson and Associates, Inc., December 1975.

viewpoint that major racial incidents are typically characterized by the collective actions of racially distinct, cohesive groups rather than by the combined acts of isolated individuals. It was recognized, however, that although the presence of racial group solidarity could be a necessary precondition for the outbreak of a major disturbance, it also could contribute to the development of positive racial climate and as such could not be considered a sole determinant of racial hostilities.

The third variable class was perceived overt discrimination toward minority group personnel on a military installation. For this class of variables, the emphasis was on the perception of discrimination and not its actual occurrence. It was assumed that most individuals tend to act on their perceptions of events, whether or not these perceptions are valid. Variables indicating perceived overt discrimination were seen to take the form of various complaints of racial favoritism both within individual companies and across an entire Army post. It was specifically hypothesized that as perceptions of overt discrimination increase, the degree of negative racial climate and hence the probability of a racial disturbance will increase.

The fourth class of variables identified as necessary or contributory to a negative racial climate was perceived overt hostility between racial groups in the military. Again, the emphasis was on the perceptual element, although the likelihood that such perceptions are verifiable appeared much greater for this class of variables than for the preceding one. Variables thought to be indicative of perceived overt hostility dealt with soldiers' opinions regarding the occurrence of racially motivated fights among Army personnel and other open expressions of racial animosity. It was hypothesized that as perceptions of incidents of overt racial hostility increase, the degree of negative racial climate and hence the probability of major racial disturbances increases.

The fifth and final variable class was described as erosion of command authority. This set of variables referred to a general negative perception by unit personnel concerning the state of unit morale, discipline, military courtesy, official communication and complaint channels, and other variables implicating the chain of command. Although problems in this category are not necessarily racial in nature, such problems have been identified prior to the occurrence of major racial disturbances at military sites. It was hypothesized that as perceptions of erosion of command authority increase, the degree of negative racial climate and hence the probability of serious racial disturbances will also increase.

The objective during the second stage of model development was to identify types of information kept within routinely maintained Army records which could be used to validate soldiers' perceptions of racial climate. Several data sources were identified, including Serious Incident Reports, records of expressed grievances kept by the Inspector General and by the Equal Opportunity/Race Relations office, the Provost Marshal's activity report, official judgments handed down by the Judge Advocate General's office, and records of punishments and disciplinary actions maintained in the files of unit commanders. It was expected that these sources of data would provide a documentation of actual events which would corroborate the assertion that perceptions of negative racial climate are predictive of racial hostilities at Army installations.

Another purpose in identifying these information sources was to facilitate the expression of the racial crisis model in terms of recorded data. It was anticipated that certain information in the Army's record-keeping system would reliably differentiate between soldiers' perceptions of positive and negative racial climate and could be useful as secondary predictors of major racial disturbances. The value in developing these secondary indicators of racial climate was in the possibility that a unit commander could use existing unit records to monitor the level of racial tension among soldiers in his charge and take action to alleviate any serious tension.

The final stage of conceptualization regarding the racial crisis model was the consideration of command strategies likely to be most effective in improving racial climate and thereby reducing the possibility of racial incidents. Yet, a general search of the literature and an examination of historical accounts of disturbances revealed no particular strategies which had been consistently demonstrated as effective in alleviating racial tension. Those actions which had been employed appeared to be shows of force; such actions were not considered representative of the full range of useful strategies which might be employed to prevent or intervene in racially tense situations. Accordingly, it was decided to ask the opinions of military leaders in the field as to appropriate strategies for dealing with racial hostilities on the basis of their experience and observations. This procedure was seen as providing a repertoire of corrective actions which are capable of being taken by Army commanders. An assessment of the comparative effectiveness of these different command strategies was planned as a subsequent research activity.

Results of the Field Investigation

A field investigation was conducted to test the racial crisis model following its conceptualization. Eight Army posts in the continental United States and overseas were visited. An interview schedule was developed to elicit perceptions of racial climate at each Army installation and administered to 298 black and white enlisted men, 31 company commanders, and 16 battalion commanders. Company and battalion commanders also were asked for information on the racial composition of their units and the frequency of certain disciplinary actions taken against soldiers in their commands as well as for their opinions regarding effective strategies for preventing or intervening in racial incidents. Other data were sought from various offices on these military installations concerning incidents of serious racial disruption, complaints of racial discrimination, punishments administered to soldiers for racial altercations, and similar events presumed to be related to negative racial climate and recorded within official Army records.

The results of data analyses generally supported the theoretical conceptualization of the racial crisis model. Using factor analytic and correlational techniques, the perceptual variable data from individual interviews were refined into four internally consistent indices which corresponded to four of the five theoretical variable classes reflecting racial climate. The indices for erosion of command authority (EROSN) and perceptions of overt hostility, renamed interracial hostility (HOST), demonstrated adequate reliabilities and appropriately discriminated between selected criterion groups. The indices for racial solidarity (RACSOL) and external environmental

conditions, renamed community hostility (COMM), were somewhat less stable and discriminating as indicators of racial climate, partially due to the small number of items comprising these indices. The variable class of perceived overt discrimination (DISC) failed to be distinguished by a separate set of interview items. The fact that several items originally keyed to this variable class were attached to the EROSN index indicates that perceptions of overt discrimination and erosion of command authority are similar in delineating racial climate and should be subsumed under the same construct. Finally, the four different perceptual indices were found to be significantly related to one another, with the exception of the COMM index. This finding suggests that indices of conceptually distinct classes of perceptual variables can be appropriately combined into a single Primary Racial Climate Index (PRCI) to obtain an overall indication of racial climate.

Secondary data analyses using individual PRCI scores revealed that racial climate was perceived differently by personnel with different demographic characteristics. Lower ranking personnel, younger men, and blacks held more negative perceptions of existing racial climate than did their counterparts, as evidenced by their scores on the EROSN and HOST indices. Furthermore, there was some disagreement between company officers' and enlisted men's perceptions of racial climate. For example, officers tended to view acts of racial solidarity as indicators of hostility, whereas enlisted men did not. Other results suggested that officers are more likely than enlisted men to attribute the perceived erosion of command authority and racial hostility to factors outside their control, such as the influence of the surrounding community. Although these findings were based on a relatively small sample of officers, it was concluded that commanders' perceptions of the conditions contributing to racial disharmony are possibly different from those of enlisted men.

The results were not so encouraging with respect to data obtained from Army records. The intended analytic strategy was to establish perceptual variable classes which are determinants of racial climate and then use them empirically to identify parallel classes of recorded data which vary directly with primary perceptual indices. Secondary indices then were to be constructed from the recorded data and used to formulate a composite Secondary Racial Climate Index (SRCI). SRCI data were to be used to validate the perceptual indices as well as provide a practical means for unit commanders to assess racial climate. Yet, mainly due to the fragmentary and inconsistent nature of the data obtained from Army records, the analytic strategy could not be carried out as planned.

The one source of secondary data which had been routinely collected in comparable format was the records kept by company commanders. Consistent data were obtained regarding three disciplinary actions at the company level: Article 15s, rehabilitation assignments, and correctional custodies. Analyses showed that the number of correctional custodies had a systematic positive relationship to two of the perceptual indices, HOST and EROSN, and that the number of rehabilitation assignments tended to be associated with the EROSN index. These results suggested that data appropriate for the construction of secondary indicators of racial climate might be sought from routinely kept records maintained in company files in future investigations.

The data collected from Army officers with regard to effective command strategies for preventing or intervening in racial incidents were summarized in the form of frequency distributions to examine which strategies were mentioned the greatest number of times. The results showed that most strategies were viewed as variously effective under different circumstances. Corrective actions involving the use of force (e.g., calling in the MPs) were mentioned most often as necessary means for handling major outbreaks of racial violence. Less forceful strategies (e.g., holding RAP sessions) were mentioned most often as techniques for preventing high levels of racial tension from developing. A list of potentially effective strategies for each kind of situation was made from the strategy results and other findings appearing in the literature. The validation of these strategies as effective means of dealing with racial tension in the Army, the estimation of their effects by other than command personnel, and the determination of their effectiveness under differing conditions of racial climate were seen to require additional research.

Research Plan for Phase II

During Phase II of the project, the racial crisis model was refined and extended and also the application of the model was demonstrated in a computer simulation. This section describes the basic objectives of this second phase of research. The remainder of the report discusses in detail the implementation of the research plan and the empirical findings.

Refinement and Extension of the Model

Although the results of Phase I basically confirmed the theoretical conceptualization of the racial crisis model, certain refinements and extensions were identified as necessary before the predictability of the model could be adequately assessed. Also, these improvements were seen as essential before the model could become of practical significance to the Army.

The first area for improvement concerned the perceptual indicators of racial climate, those used to construct the Primary Racial Climate Index. Two of the PRCI indices were found in Phase I to have less than adequate reliability and internal consistency, and their association with other variables was not clearly demonstrated. A main objective of Phase II was to strengthen the item pools from which these and other perceptual indices were constructed in order to improve the predictability of the racial crisis model. Another problem in the Phase I examination of PRCI indices was the relatively small sample from which perceptual data were obtained. Accordingly, plans were made to obtain a larger and more representative sample of Army personnel so that statistically reliable tests could be made regarding the primary perceptual variables.

The second set of objectives for Phase II research focused on the discovery of appropriate secondary indicators of racial climate. Phase I efforts did not produce suitable data from Army records for deriving SRCI variables. The major problem was in finding data consistently kept in Army records and then gaining access to the data when available. The only information source which produced regularly recorded data suitable for analysis was individual company records. The intention during Phase II was to examine

the record-keeping system at the company level to investigate other kinds of records which could be used to establish secondary racial climate variables. Following data collection, the secondary variables were to be used to validate the primary perceptual indices, to formulate the crisis model in terms of accessible recorded information, and to generate a Secondary Racial Climate Index.

The third area for improvement and extension concerned the command strategies likely to be effective in preventing or alleviating racial tension among Army personnel. Phase I research had identified a list of potentially effective strategies based on the expressed opinions of Army leadership. Given this list of potential strategies, the plan during Phase II was to ask both company officers and enlisted men to estimate the impacts of various strategies in different situations. Each of four situations was to be described in terms of events characterizing the four variable classes constituting the racial crisis model. By this method, it was hoped that more precise estimates could be obtained regarding the effectiveness of different command strategies when employed in problem situations which the crisis model is designed to predict. It was assumed that the strategies most likely to be successful would be those which Army personnel consider most effective in reducing racial tension.

Model Simulation

Plans also were made during Phase II to examine the predictability of the racial crisis model in a computer simulation. A principal objective was to display the differential impacts of various command strategies on racial crisis events. A necessary assumption for this type of simulation was that those strategies which Army personnel perceived would have the greatest positive impact in alleviating racial tension would in fact be the same strategies likely to be most effective if applied to actual events. Such a simulation, although operating on data empirically gathered in the field, also was envisioned as a hypothetical application of the racial crisis model due to the imposition of certain probabilistic techniques based on the judgment of the investigators. Given these restraints, the simulation was designed to show the interrelationships among events thought to be determinants of racial climate and to exhibit the effects of command strategies on these events in a variety of hypothetical situations.

REFINEMENT AND EXTENSION OF RACIAL CRISIS MODEL

Methodology

The basic methodology for refining and extending the racial crisis model involved the development and administration of two survey instruments. After these instruments were pretested, they were used to collect data from a representative sample of Army personnel stationed at various U.S. Army installations.

Instrument Development

The first survey instrument, the Soldiers' Perceptions Survey, was developed as a modification and extension of the individual interview schedule administered during Phase I. The second instrument, the Inventory of Company Status, provided for the systematic collection of data from individual company records. These two instruments were designed both to incorporate certain changes in instrumentation suggested by Phase I results and to restructure the format for data collection to accommodate a larger Army sample.

Soldiers' Perceptions Survey. The purpose of the Soldiers' Perceptions Survey was to measure soldiers' perceptions of racial climate at their respective installations, to assess their opinions regarding the effects of certain command strategies in given situations, and to obtain selected demographic information.

The first series of questionnaire items was designed to provide reliable primary indices of racial climate corresponding to the four PRCI constructs identified in Phase I. Phase I items which had been found to comprise the original primary indices and were theoretically consistent with racial climate constructs were maintained in the questionnaire, while those which had proven as less reliable indicators either were eliminated or appropriately modified for inclusion. Furthermore, new items were generated in order to strengthen the primary perceptual indices, especially with respect to racial solidarity and community hostility. The entire set of items was comprised of 84 statements followed by 5-point Likert-type response scales. For 33 of the items, personnel were to express their agreement with each statement on a scale ranging from "Strongly agree" to "Strongly disagree." For each of the remaining 41 items, personnel were to indicate their opinions as to the frequency with which a stated event had occurred on a scale ranging from "Never" to "Very frequently."

The second series of questionnaire items was intended to obtain soldiers' opinions of the effectiveness of different actions a company commander might take to reduce racial tension. Four situations were described, each characterized in terms of those variables which had comprised one of the PRCI indices formulated in Phase I. Following the description of each situation was a listing of command strategies which had been identified in Phase I by Army officers as being effective in dealing with racial hostilities. Respondents were to give their own ratings of the different strategies on 5-point bipolar rating scales, with polar extremes characterizing the effect on racial climate as either very favorable or very unfavorable. Each strategy was rated twice for a given situation--once under the interpretation that the situation was extremely severe and once under the interpretation that the situation was relatively mild. Space was provided in either case for respondents to write in other strategies and rate their effectiveness. A total of 88 items comprised this section of the questionnaire.

The remaining 12 questionnaire items asked respondents to supply certain demographic information. Individual paygrades, ethnic backgrounds, and company designations were asked in order to be able to describe the characteristics of participating personnel and to perform statistical analyses on the basis of variables used to stratify the sample. The other demographic items

requested the ages and education levels of respondents and certain information about their backgrounds in the Army.

Inventory of Company Status. The Inventory of Company Status instrument was designed to provide data from routinely kept Army records for use in validating the PRCI indices and formulating secondary indicators of racial climate.

Based upon Phase I findings, it was determined that individual company records would be a reliable and appropriate source of secondary data. Accordingly, the Inventory was constructed to request three basic kinds of information routinely carried in company files. The first section of the Inventory asked for company strength and racial composition as indicated in monthly Morning Reports for the 12 months preceding data collection. The second section requested the number of Article 15s administered during the preceding 3 months according to type of offense. The third and final section asked for the numbers of different disciplinary actions taken against company personnel in the preceding 3-month period. This information was requested separately by race for each of the following punishments: Article 15s, bars to reenlistment, rehabilitation assignments, correctional custodies, restrictions, and flagging actions. In addition, although not specifically requested in the Inventory form, it was planned to ask for sick-call rates for individual companies during data collection.

Pretest of Instruments. There were two main purposes in conducting the pretest. The first was to test the serviceability of the instruments with regard to the clarity of instructions, the comprehension of survey items, the ease of administration, etc. The second purpose was to assess the adequacy of data provided by the survey items. For the Soldiers' Perceptions Survey, it was desirable to eliminate any items which did not demonstrate a relationship to crisis model parameters. For the Inventory of Company Status, it was felt that items should be eliminated if they asked for information not routinely available or inconsistently recorded across different company files.

The preliminary survey instruments were taken to an Army post in the continental United States during May 1974 and administered to 10 different companies and to certain unattached company commanders temporarily residing at the post for training purposes. Each company was asked to provide 13 personnel to complete the Soldiers' Perceptions Survey: 1 company commander, 2 NCOs (E7 or E8), 5 black enlisted men (E1-E4), and 5 white enlisted men (E1-E4). Ten unattached company commanders were asked to participate in the survey. The company clerks of companies sampled additionally were requested to supply the information asked for in the Inventory of Company Status. Most inventory forms were completed, and a total of 136 individuals filled out survey questionnaires.

In addition to obtaining the individual reactions of Army personnel to the pretest instruments, several analyses were performed on pretest data. Summary statistics were obtained for all items in the Soldiers' Perceptions Survey, and the PRCI items were subjected to a partial item analysis using factor analytic and correlational techniques. Additionally, strategy data for the hypothesized racial climate situations were compared across the two levels of severity described for each of these situations. No statistical analyses were performed on the Inventory data, primarily due to the small

number of companies in the sample. However, detailed comments were obtained in conversations with the company clerks who completed the instrument, and the data collected were thoroughly examined with regard to accuracy, completeness, and frequency of information.

Modifications Resulting From the Pretest. Several modifications were made to each survey instrument based on the results of the pretest. Seventeen PRCI items were eliminated from the Soldiers' Perceptions Survey because of their lack of relationship to any of the primary perceptual indices of racial climate. A number of retained PRCI items were reworded to achieve a better balance between positively and negatively worded items. The differentiation between high and low levels of severity for hypothetical situations in the strategy section was dropped, leaving only one set of command strategies per situation. This alteration was made because of the high correlations between items at the two levels of severity. Those items allowing respondents to write in additional strategies for improving racial climate were eliminated due to a lack of response. Finally, the format of the instrument was altered slightly to facilitate the use of mechanically scorable answer sheets, and a few minor wording changes were made to improve the clarity of some items.

Modifications to the Inventory of Company Status mainly involved the elimination of data requirements which could not be met on the basis of information kept within company records. Requests for Morning Report data regarding company strength and composition were reduced to cover a 3-month period preceding data collection instead of a 12-month period. Also, the format for indicating Morning Report data was revised for greater clarity, and requirements for indicating sick-call rates were dropped because this information was not available. Finally, the section for reporting Article 15s was revised to reduce the number of different types of Article 15 offenses included and to provide a means of indicating the exact nature of multiple punishments for individual Article 15s.

Sample

The population sampled consisted of individual Army companies and male Army personnel in three categories of military rank: enlisted men (E1-E4), senior NCOs (E7-E8), and officers (O1 and above) functioning as company commanders. The focus of the investigation was upon black and white Army personnel due to the predominance of these respective ethnic groups in the Army.

Sampling Plan. The final sampling plan called for five U.S. Army posts to be surveyed. To obtain a representative sample, these posts were to be stratified on the basis of major functions of operating divisions at the posts. Two posts were to have Infantry divisions, while the other three were to have Mechanized, Armored, and Airborne divisions.

The sampling plan for each post required that 24 separate companies be selected for participation. Twenty of these companies were to be combat or combat support units organic to a division, and four were to be attached to the division as support units.

The sampling units for administering the Inventory of Company Status were individual Army companies. Company clerks were to be included in the sample for the purpose of completing this instrument. Accordingly, 24 clerks were requested to participate at each post for a total of 120 clerks across all posts sampled.

The sampling units for administering the Soldiers' Perceptions Survey were individual company personnel. Within each company at a given post, subjects were to be stratified by race and rank. The company commander was to complete the survey along with two company NCOs (E7-E8), preferably one black and one white, five black enlisted men (E1-E4), and five white enlisted men (E1-E4). Company commanders were instructed to select NCOs and enlisted men within each ethnic category on a random basis. According to this plan, 13 subjects were to be sampled from each company, 312 subjects from each post, and a total of 1,560 subjects across all posts sampled.

Obtained Sample. Companies and subjects were surveyed from July through September 1974. Usable data were collected from 119 different companies and from 1,383 Army personnel at the five posts visited. Company and subject distributions for different types of posts and companies are shown in Table 1. The distribution of subjects by race and rank is displayed in Table 2.

Although the basic sampling requirements were met, some difficulties were experienced in obtaining the desired sample. A substantial number of respondents who appeared to complete the Soldiers' Perceptions Survey did not meet the sampling requirements for race and rank. Usually the investigators were able to identify these respondents during data collection and obtain suitable replacements. Data from all respondents who did not meet these sampling requirements were eliminated from analysis. On two posts, a large number of personnel were supplied from companies not given Inventory forms. Data from these respondents also were eliminated.

Data collected from a few other personnel also were considered unacceptable for analysis. Some individuals did not indicate their race or rank, while others gave responses which were highly irregular. Other respondents did not complete a sufficient number of items. Also, in some companies too many individuals were sampled from a particular respondent category. Data from subjects who had been oversampled were eliminated at random to obtain the proper number of respondents. A summary of the number of personnel eliminated from the sample from each post is given in Appendix A according to the reason for elimination.

A few difficulties also were encountered in meeting the sampling requirements for company records data using the Inventory of Company Status. Of the Inventories eliminated, one was rejected because it contained no information regarding company strength, and another Inventory was rejected because an adequate number of company personnel did not complete the Soldiers' Perceptions Survey. Five more Inventory forms never were returned to the investigators. A total of 113 Inventories of the 120 requested were completed satisfactorily and used for analyses.

Table 1

Distributions of Companies and Subjects by Post and Company Types

<u>Type of Post</u>	<u>Posts</u>	<u>Type of Company</u>			
		<u>Organica</u>		<u>Support</u>	
		<u>Companies</u>	<u>Subjects</u>	<u>Companies</u>	<u>Subjects</u>
Infantry	2	38	443	11	136
Armored	1	19	180	5	51
Mechanized	1	19	242	3	61
Airborne	<u>1</u>	<u>20</u>	<u>226</u>	<u>4</u>	<u>44</u>
Total	5	96	1091	23	292

^aDesignates companies attached to a division either as combat or combat support units.

Table 2
Distribution of Subjects by Race and Rank

<u>Rank</u>	<u>Race</u>			<u>Total</u>
	<u>Black</u>	<u>White</u>	<u>Other</u>	
Officer (O1 and above)	1	111	1	115
NCO (E6-E8) ^a	59	134	13	221
Enlisted man (1-E4)	505	542	0	1047
<u>Total</u>	<u>565</u>	<u>787</u>	<u>14</u>	<u>1383</u>

^aSubjects with E6 paygrades were included in the sample as NCOs due to the unavailability of higher ranking enlisted personnel from individual companies.

Data Collection Procedure

Data collection was conducted by two-member research teams, which spent approximately 1 week at each Army post. On the first day of the visit, team members held a meeting with the company clerks of all companies to be surveyed. The clerks were given instructions for filling out the Inventory of Company Status, which they took back to their companies for completion.

Throughout the week of data collection, testing sessions were held to administer the Soldiers' Perceptions Survey. These sessions usually lasted about 1 hour and typically included from 30 to 60 respondents.

Results

Data collected from Army personnel were subjected to a number of statistical analyses to test the refinement and extension of the racial crisis model. This section reports the results of these analyses and relates the results to findings obtained during Phase I of the research project.

Refinement and Analysis of PRCI Indices

Several analyses were conducted to refine the PRCI indices of racial climate, to assess their relationship to the demographic characteristics of Army personnel, and to determine their interrelationships at the company level.

Revision of PRCI Scales. Phase I of this project produced item pools corresponding to four conceptually distinct variables of concern to the development of a model of racial crisis: interracial hostility, erosion of command authority, racial solidarity, and community hostility. Adequate reliabilities for indices formed from two of these item pools, erosion of command authority (EROSN) and interracial hostility (HOST), were found, and both of these indices consistently discriminated between appropriate groups on five criterion variables. A third index, corresponding to racial solidarity (RACSOL), showed somewhat lower reliability and discriminated on some but not all of the criterion variables. Theoretically consistent results for all three of these indices also were found with demographic and other variables at the individual level. A fourth index, that for community hostility (COMM), suffered from lack of reliability due to too few items and showed no consistent relationship with criteria or with demographic variables. Because of its theoretical relevance, and because it nonetheless had proven useful in interpreting relationships between men's and commanders' perceptions as measured by the indices, it too was retained for further development in Phase II of the research.

Index Refinement. The first task in Phase II was the refinement of the indices to include items of sufficient number to produce adequate reliability and comparable format for summing operations. Prior to the pretest, 84 items in a 5-point rating format were constructed, with 21 tentatively keyed to each of the four concepts. Most items were adapted from other formats used in Phase I, with sufficient numbers of conceptually similar items being constructed to yield the preliminary item pool of 84 items. As was described

in greater detail earlier, analyses of the pretest data suggested the dropping of some items and wording changes in others. Because the purpose of the pretest was to provide a pool of relevant items for use in constructing final indices from the primary sample, very loose criteria for retention were used. The resultant item pool contained 68 items, balanced across two rating wordings ("Never" to "Very frequently," and "Strongly agree" to "Strongly disagree"), positive or negative direction of statement, and the four conceptual domains of racial climate. The expectation was that in the analyses of data from the primary sample, indices of no fewer than 10 items could be constructed for each of the four conceptual domains.

Partly to validate the existence of the item domains established in Phase I, and partly to obtain preliminary keying of items to indices, a factor analysis of the 68 items for the entire sample of 1,047 enlisted men (EM) was performed. The technique used was a principal axis factor analysis, with communalities estimated by highest row and column correlation coefficients, followed by a varimax rotation of six extracted factors. Rotation of six factors rather than the four which would correspond to the previously identified content domains was selected against the possibility that other salient concept domains might be present in the data. Tables 3 through 8 contain listings of the factor loadings and item descriptions for all items loading $\geq .40$ on each of the six rotated factors.

Items with high loadings on the first rotated factor, shown in Table 3, dealt without exception with voluntary associations between black and white soldiers. It will be recalled from previous discussion that the absence of such associations was a major component in the definition of racial solidarity, the degree to which blacks and whites maintained separate racial groupings. Items loading highly on this factor then were used to form the initial item pool for RACSOL in the item analysis which followed.

Items with high loadings on the second rotated factor, shown in Table 4, without exception had come from the concept domain of EROSN, erosion of command authority, and dealt with perceptions that officers dealt fairly with their men in decisions concerning duty assignments, promotions, etc. This replicated similar findings of Phase I and, accordingly, these highly loading items were used to form the initial pool for EROSN in the item analysis.

Items with high loadings on the third rotated factor, shown in Table 5, similarly replicated the analysis of Phase I for the interracial hostility (HOST) factor, in that they dealt with perceptions of acts of overt hostility between racial groups. These items therefore were used in the initial pool for HOST in the item analysis that followed.

To this point, the results of the factor analysis were as expected. It was further expected that the fourth rotated factor would contain items reflecting the content domain of the community hostility (COMM) index. This was not the case, as can be seen from the items and loadings presented in Table 6. Items 35, 39, 46, 57, and 66 all came from the preliminary RACSOL pool, although only one of them (57) also loaded highly on the first factor. Thus, this factor, as represented by the majority of its highly loading items, seemed most strongly to represent a second aspect of the concept of racial solidarity. Examination of item content for this and the first factor suggested that, whereas the first factor dealt with occurrence of voluntary

Table 3

Questionnaire Items Loading $\geq .40$ on Factor 1 (RACSOL^a)^b

Item #	Item Description	Factor Loading
4	Blacks and Whites in my company get together only when they are on duty assignments.	.466
7	You often see Black and White soldiers going places together on this post.	.485
10	Black soldiers in my company have a lot in common with White soldiers.	.569
18	Most Black soldiers in my company have both Black and White buddies.	.606
31	There are often close friendships between Black and White soldiers on this post.	.558
43	Soldiers in my company group together in the barracks by race.	.405
49	Black and White soldiers in my company hang around together after duty hours.	.625
52	Black and White soldiers in my company "rap" together.	.545
57	After duty hours, soldiers stick together in groups of their own race.	.443
63	Black and White soldiers stick together when they are off post.	.493

^a RACSOL = Racial Solidarity.^b In computing factor loadings, each item was scored such that a higher score indicated more negative racial climate.

Table 4

Questionnaire Items Loading $\geq .40$ on Factor 2 (EROSN^a)^b

Item #	Item Description	Factor Loading
12	NCOs and officers on this post discriminate against me.	.469
16	Officers in this company are very responsive to the men's grievances.	.434
20	Complaints about discrimination are treated fairly in this company.	.466
25	Promotions in my company are not based on a soldier's race.	.418
28	The leave policy in my company is generally fair.	.439
32	Duty assignments are often based on race in this company.	.457
41	Punishment and discipline in my company are handled fairly.	.607
54	Officers in my company handle complaints fairly.	.717
58	Officers in this company handle promotions fairly.	.652
65	Officers in this company make fair duty assignments.	.608

^aEROSN = Erosion of Command Authority.^bIn computing factor loadings, each item was scored such that a higher score indicated more negative racial climate.

Table 5

Questionnaire Items Loading $\geq .40$ on Factor 3 (HOST^{a,b})

Item #	Item Description	Factor Loading
36	White soldiers gang together to keep Black soldiers out of facilities that are supposed to be open to everybody.	.528
37	I have been treated unfairly because of my race at the PX, Commissary or other post facilities.	.532
47	There have been physical assaults by White soldiers in my company.	.539
53	Black soldiers gang together to keep White soldiers out of facilities that are supposed to be open to everybody.	.530
56	There are racially offensive symbols displayed on post.	.426
59	There are racial incidents between soldiers in my company	.465
60	There are racially offensive symbols displayed in my company.	.501
62	Black soldiers in this company make fun of White's hair style, music or food preferences.	.415
67	There have been physical assaults by Black soldiers in my company.	.489

^aHOST = Racial Hostility^bIn computing factor loadings, each item was scored such that a higher score indicated more negative racial climate.

Table 6

Questionnaire Items Loading $\geq .40$ on Factor 4 (RACSEP^a)^b

<u>Item #</u>	<u>Item Description</u>	<u>Factor Loading</u>
35	I have seen the "DAP" and other racial or ethnic gestures used on this post.	.473
39	Blacks on this post stay within their own group.	.449
42	There have been fights between soldiers and civilians off post.	.410
46	I have seen the "DAP" and other racial or ethnic gestures used in my company.	.468
51	Soldiers on this post are hassled by the Military Police.	.415
57	After duty hours, soldiers stick together in groups of their own race.	.492
61	There is prejudice against soldiers in the civilian community surrounding the post.	.475
64	Black soldiers let other Blacks cut in on mess lines.	.505
66	Blacks soldiers on this post prefer to sit together in the mess hall.	.555

^aRACSEP = Racial Separation.^bIn computing factor loadings, each item was scored such that a higher score indicated more negative racial climate.

Table 7

Questionnaire Items Loading $\geq .40$ on Factor 5 (COMMD^a)^b

<u>Item #</u>	<u>Item Description</u>	<u>Factor Loading</u>
17	Soldiers here can get into a lot of trouble when they go off post.	.419
21	It's not safe for a soldier to go off post alone.	.466
24	Black soldiers here can get into a lot of trouble when they go off post.	.467

^aCOMMD = Community Danger,

^bIn computing factor loadings, each item was scored such that a higher score indicated more negative racial climate.

Table 8

Questionnaire Items Loading $\geq .40$ on Factor 6 (COMM^a)^b

<u>Item #</u>	<u>Item Description</u>	<u>Factor Loading</u>
3	There are enough bars, restaurants, and night-clubs off post open to soldiers.	.453
30	There are enough bars, restaurants, and night-clubs open to Blacks off post.	.494

^aCOMM = Community Relations.

^bIn computing factor loadings, each item was scored such that a higher score indicated more negative racial climate.

associations between blacks and whites, items on this factor more often reflected the occurrence of physical acts that symbolized an attitude of racial separatism. Accordingly, it was decided to use the items from this factor, referred to as RACSEP, as an initial pool in the item analysis.

Just as the first and fourth rotated factors appear to reflect different aspects of racial group solidarity, the fifth and sixth factors appear to be concerned with two different aspects of external environmental conditions or community conditions. The fifth factor, for which highly loading items are presented in Table 7, reflects perceptions of physical danger for soldiers off post. The sixth factor, presented in Table 8, was defined by only two highly loading items, both dealing with availability of off-post entertainment. In the item analyses that followed, separate item pools were developed from these factors and will be referred to as the community danger (COMMD) and community isolation (COMM) indices from this point.

It should be noted that the existence of two poorly defined community factors (in terms of number of high loading items) also tends to support the findings of Phase I in which little empirical support was found for the existence of a consistent concept domain dealing with aspects of the surrounding environment. Although the current factor analytic results strongly suggested that the lack of expected relationships in Phase I was due to the nonexistence of a consistent concept domain rather than the unreliability of the Phase I index, it was decided to include the poorly defined factors in the item analysis for Phase II.

Item Analyses. The Phase II factor analysis confirmed that two of the four theoretical constructs isolated and investigated in Phase I, erosion of command authority and perceptions of overt hostility, also continued to define relatively independent subsets of items from the questionnaire dealing with the men's perceptions. Creation of a large initial item pool for the content domain of the third concept, racial group solidarity, produced not one but two factors related to this concept. For the fourth concept, conditions in the external community, two factors also were found, although neither contained a large number of defining (highly loading) items.

Item analyses next were performed on the total item pool with the goal of producing internally consistent empirical indices (PRCIs) corresponding to the six factors just described. For the first three factors, these item analyses can be viewed as the refinement and cross-validation of the RACSOL, HOST, and EROSN indices developed in Phase I. For the fourth factor it was anticipated that the development of a RACSEP index might be useful in investigating the relationship of a different aspect of racial group solidarity than that reflected by RACSOL. Construction of two indices for the community-environment domain, COMMD and COMM, also was to be attempted, although the lack of many highly loading items on the corresponding factors suggested that the resulting indices would have too few items to produce reliable sources, as had been the case in Phase I.

As in the Phase I item analysis, items to be retained needed to possess two characteristics: high correlation with other items in the same PRCI index and low correlation with items retained in other PRCI indices. Generally, items were to be chosen that would minimize relationships among internally consistent indices and hence maximize the potential independent contributions

of the indices to the prediction of overall racial climate. These criteria were translated into the following two working rules, which are similar to those used in Phase I.

Rule 1: The correlation of a retained item with its keyed index must meet $r_{ai} \geq .50$.

Rule 2: The correlations of a retained item with any index other than the keyed index must be at least .20 less than that with the keyed index.

The initial step in the item analysis was the summing of scores across all items that loaded $\geq .40$ on a given factor in the factor analysis. This produced an initial score for each individual in the sample on the index represented by that factor. Once this had been accomplished, item-total correlations then were obtained for each index total against all 67 items in the relevant portion of the questionnaire.

Items then were selectively added to or deleted from each index on the basis of the two working rules stated above. New index totals were computed after this addition and deletion of items, and item-total correlations for the revised indices obtained. The process was repeated until no further addition or deletion of items was indicated by either rule. The final correlations of each of the retained items with both keyed and nonkeyed indices are presented in Tables 9 through 14.

The product of the item-analysis process was six PRCI indices, one for each of the factors rotated in the factor analysis. Three of the indices, RACSOL, EROSN, and HOST, had adequate numbers of keyed items (10, 10, and 11, respectively) and showed adequate internal consistency. Internal consistency estimates, as calculated by the Spearman-Brown formula from item average intercorrelations, were $r = .69$ for RACSOL, $r = .70$ for EROSN, and $r = .64$ for HOST. The latter two reliability estimates are almost exactly the same as those found in Phase I; that for RACSOL is substantially higher (.48 in Phase I).

As had been expected, the item analysis procedure produced indices of inadequate item length for the two community factors, COMM and COMMD, and for the RACSEP index (6, 5, and 6 items, respectively). Because of this inadequate test length, the Spearman-Brown estimates of internal consistency also were substantially lower: $r = .44$ for COMM, $r = .32$ for COMMD, and $r = .51$ for RACSEP.

The results of the item analysis, then, were strikingly familiar to those of Phase I for three of the four theoretical constructs. Usable indices were produced corresponding to erosion of command authority (EROSN) and perceptions of overt racial hostility (HOST). Even with a large pool of initial items from the content domain relevant to the external community, no such consistent index was found corresponding to that concept, again replicating Phase I results. Instead, two weak indices were produced, indicating strongly that the external community environment, while certainly having effects upon the racial climate in the Army, is not perceived by the enlisted men as a single, coherent entity.

Table 9

Product-Moment Correlations of Questionnaire Items Included
in RACSOL Index, with All Indices^a

Item #	Item Description	Correlation with					
		EROEN	RACSOL	HOST	COMM	COMMD	RACSEP
4	Blacks and Whites in my company get together only when they are on duty assignments.	.20	.57	.17	.13	.16	.13
7	You often see Black and White soldiers going places together on this post.	.19	.60	.23	.13	.07	.23
10	Black soldiers in my company have a lot in common with White soldiers.	.27	.65	.20	.15	.06	.22
18	Most Black soldiers in my company have both Black and White buddies.	.26	.68	.25	.13	.02	.23
31	There are often close friendships between Black and White soldiers on this post.	.28	.65	.25	.16	.03	.19
43	Soldiers in my company group together in the barracks by race.	.13	.57	.30	.04	.08	.38
49	Black and White soldiers in my company hang around together after duty hours.	.23	.67	.24	.13	.08	.12
52	Black and White soldiers in my company "rap" together.	.27	.58	.31	.19	.10	.00
57	After duty hours, soldiers stick together in groups of their own race.	.07	.57	.19	.01	.08	.51
63	Black and White soldiers stick together when they are off post.	.21	.37	.13	.11	.05	.28

^aIn computing correlations, each item was scored such that a higher score indicated more negative racial climate.

Table 10

Product-Moment Correlations of Questionnaire Items Included
in EROSN Index, with All Indices^a

Item #	Item Description	EROSN	Correlation with				RACSEP
			RAC SOL	HOST	COMM	COMMD	
12	NCOs and officers on this post discriminate against me.	.59	.22	.21	.22	.12	.11
16	Officers in this company are very responsive to the men's grievances.	.55	.18	.15	.16	.00	.17
20	Complaints about discrimination are treated fairly in this company.	.61	.30	.19	.21	.05	.09
25	Promotions in my company are not based on a soldier's race.	.60	.29	.21	.34	.05	.06
28	The leave policy in my company is generally fair.	.55	.15	.19	.22	.06	.02
32	Duty assignments are often based on race in this company.	.61	.31	.29	.30	.10	.10
41	Punishment and discipline in my company are handled fairly.	.64	.16	.27	.25	.00	.02
54	Officers in my company handle complaints fairly.	.72	.20	.22	.27	.09	.02
58	Officers in this company handle promotions fairly.	.66	.16	.23	.30	.05	-.04
65	Officers in this company make fair duty assignments.	.64	.15	.18	.35	.08	-.05

^a In computing correlations, each item was scored such that a higher score indicated more negative racial climate.

Table 11

Product-Moment Correlations of Questionnaire Items Included
in HOST Index, with All Indices^a

Item #	Item Description	Correlation with					
		EROSN	RACSOL	HOST	COMM	COMMD	RACSEP
36	White soldiers gang together to keep Black soldiers out of facilities that are supposed to be open to everybody.	.22	.06	.52	.26	.05	-.17
37	I have been treated unfairly because of my race at the PX, Commissary or other post facilities.	.24	.07	.51	.24	-.01	-.18
44	White officers in this company have trouble handling Black soldiers.	.24	.31	.45	.04	.06	.34
47	There have been physical assaults by White soldiers in my company.	.15	.12	.54	.11	.00	-.04
50	White soldiers in this company make fun of Blacks' hair style, music or food preference.	.20	.23	.54	.13	.11	.13
53	Black soldiers gang together to keep White soldiers out of facilities that are supposed to be open to everybody.	.11	.20	.60	.00	.02	.16
56	There are racially offensive symbols displayed on post.	.20	.06	.57	.07	.06	.14
59	There are racial incidents between soldiers in my company.	.24	.36	.62	.11	.08	.24
60	There are racially offensive symbols displayed in my company.	.26	.25	.63	.09	.05	.07

(continued)

(continued)

Table 11 (Continued)

Item #.	Item Description	Correlation with					
		<u>EROSN</u>	<u>RACSOL</u>	<u>HOST</u>	<u>COMM</u>	<u>COMMD</u>	<u>RACSEP</u>
62	Black soldiers in this company make fun of Whites' hair style, music or food preferences.	.15	.24	.57	.08	.08	.30
67	There have been physical assaults by Black soldiers in my company.	.12	.21	.59	.04	.05	.24

^aIn computing correlations, each item was scored such that a higher score indicated more negative racial climate.

Table 12

Product-Moment Correlations of Questionnaire Items Included
in COMM Index, with All Indices^a

Item #	Item Description	Correlation with				
		EROSN	RACSOL	HOST	COMM	COMMD
3	There are enough bars, restaurants, and night-clubs off post open to soldiers.	.23	.12	.08	.68	.03
6	Soldiers are able to go off post into the community often enough.	.26	.13	.10	.51	.04
30	There are enough bars, restaurants, and night-clubs open to Blacks off post.	.26	.19	.05	.63	.08
33	The Army should provide more for soldiers on the post because there is little for them on post.	.16	.02	-.03	.50	.11
38	Soldiers are welcome at off-post bars, restaurants, and nightclubs.	.27	.07	.24	.57	.09
48	Blacks are welcome at off-post bars, restaurants, and nightclubs.	.28	.15	.26	.58	.14
						-.18

^aIn computing correlations, each item was scored such that a higher score indicated more negative racial climate.

Table 13
Product-Moment Correlations of Questionnaire Items Included
in COMMD Index, with All Indices^a

Item #	Item Description	Correlation with				
		<u>EROSN</u>	<u>RACSOL</u>	<u>HOST</u>	<u>COMM</u>	<u>COMMD</u>
17	Soldiers here can get into a lot of trouble when they go off post.	-.02	.03	.01	-.01	.61
19	White soldiers tend to be very suspicious of any group of Blacks on or off duty.	.17	.23	.12	.08	.50
21	It's not safe for a soldier to go off post alone.	.02	.02	.02	.09	.67
24	Black soldiers here can get into a lot of trouble when they go off post.	.07	.08	.06	.08	.63
26	It's safe for a Black soldier to go off post alone.	.04	.03	.07	.15	.56
						-.01

^aIn computing correlations, each item was scored such that a higher score indicated more negative racial climate.

Table 14

Product-Moment Correlations of Questionnaire Items Included
in RACSEP Index, with All Indices^a

Item #	Item Description	Correlation with				
		EROSN	RACSOL	HOST	COMM	COMMD
35	I have seen the "DAP" and other racial or ethnic gestures used on this post.	.06	.21	.11	-.01	.08
39	Blacks on this post stay within their own group.	.03	.36	.09	-.08	.10
46	I have seen the "DAP" and other racial or ethnic gestures used in my company.	.12	.26	.19	.02	.01
61	There is prejudice against soldiers in the civilian community surrounding the post.	.07	.11	.10	.04	.12
64	Black soldiers let other Blacks cut in on mess lines.	.01	.17	.23	-.11	.05
66	Blacks soldiers on this post prefer to sit together in the mess hall.	-.01	.29	-.01	-.11	.08

^aIn computing correlations, each item was scored such that a higher score indicated more negative racial climate.

The results for racial group solidarity, however, differed substantially from those of Phase I. Given an initial pool of relevant items of sufficient length, an index (RACSOL) of sufficient length and reliability comparable to those of EROSN and HOST was produced. Thus, the absence of such an index in Phase I in this case was probably due to lack of sufficient sampling of the item domain rather than lack of validity of the underlying construct. In addition, a second index related to racial group solidarity, RACSEP, also was produced, although its low internal consistency precludes its use in other than an exploratory fashion in the present project.

Relationship of PRCI Indices to Demographic Variables. Interesting and highly significant differences were found between the four original PRCI indices and a variety of demographic variables. Because of the large sample sizes involved, only results significant beyond the .01 level will be discussed. (A table presenting all the PRCI/demographic variable comparisons is included as Appendix C.) Using analysis of variance followed by the Newman-Keuls multiple comparison test, the following differences were found for each of the EROSN, RACSOL, HOST, and COMM variables.

1. Rank. Without exception, as rank increased, individual ratings on the four indices decreased. Thus, enlisted men generally perceived the highest degrees of erosion of command authority, racial group solidarity, overt racial hostility, and negative community environment, while the officers uniformly perceived a significantly lesser degree of negative climates on each of the indices. NCOs uniformly perceived an amount of negative climate at an intermediate point between enlisted men and officers.

2. Age. For each of the four indices, as age went from youngest to oldest in five categories (less than 20 years of age, 20-21 years, 22-23 years, 24-29 years, and 30 years or older), negative perception of climate went from highest to lowest. Although differences between adjacent means were not always significant, the overall trend was significant in every case. Thus, the younger the individual, the more negative he perceived his Army environment in terms of the four racial climate indices.

3. Time in the Army. Respondents were classified into categories based on the length of time they had served in the Army. On each of the four indices the pattern of means showed a sharp division between those who had spent 5 or more years in the Army and those who had spent 1 to 4 years in the Army, with the latter having substantially more negative perceptions of the racial climate as measured by scores on the four indices. Those who had been in the Army less than a year, however, did not show the most negative perceptions, as might be expected from the above. Instead, their index scores generally were intermediate between the 1- to 4-year respondents and the 5- to 10-year respondents, perhaps because they simply had not been in the Army long enough to develop firm perceptions.

4. Intention to reenlist. Respondents were divided into three categories based upon their intentions concerning future reenlistment: those who intended to reenlist, those who were undecided, and those who intended not to reenlist. Uniformly, those who indicated they intended to reenlist had significantly more positive index scores than those who said they intended not to reenlist. PRCI scores for those who were undecided generally were intermediate in value.

5. Time in company and time on post. Respondents also were categorized in terms of length of time they had spent at their posts and in their companies. Results with respect to these variables were somewhat surprising but consistent with those found in Phase I, where no consistent relationships between them and the unrefined PRCI scores occurred. In the present analyses, only one of the eight analyses of variance showed a significant relationship--that between the EROSN index and length of time on post. In that instance, the results indicated that the less the time spent on the post, the greater the perception of erosion of command authority.

6. Demographic variable relationships with COMMD and RACSEP. Supporting the tentative and empirical rather than theoretical derivation of the two new indices, COMMD and RACSEP, developed from the factor analysis is the fact that their patterns of relationships to the demographic variables were generally not the same as those of the four theoretically based indices. There were no significant relationships found between COMMD and any of the demographic variables. Relationships were found between RACSEP on reenlistment decisions, time in the Army, time in the company, and time on the post.

7. Summary of demographic variable analyses. As described above, each of the four theoretically derived indices showed strong and consistent relationships with a number of demographic variables. Soldiers who were younger, who had been in the Army for a single enlistment or less, who had decided not to reenlist, and who were enlisted men tended to have more negative perceptions of all aspects of racial climate, as measured by the PRCI indices, than did those who were older, had been in the Army for 5 or more years, who had decided to reenlist, and whose ranks were at the NCO or officer level. These findings are of special significance, perhaps, in that the variables cited are all ones which distinguish between enlisted men, on the one hand, and NCOs and officers, on the other. In other words, they suggest that NCOs and officers have more positive perceptions of racial climate in each of the four areas than do the men they command.

Summary of PRCI Refinement. The analyses described to this point parallel in many ways those described in Phase I of this project. This similarity, of course, was purposeful in that the goal of these analyses was to refine and strengthen the indices defined in Phase I, using a larger and more representative sample. A second goal of the similarity was to allow a direct comparison of the results of the analyses between Phase I and Phase II. To the extent that the results of the two phases agreed, the underlying concepts of the theoretical model could be considered to be strongly supported. To a large extent, both goals were achieved.

With respect to index refinement, three of the four original indices--EROSN, HOST, and RACSOL--were further developed to the point that they displayed acceptable, if not exceptional, internal consistency reliability. Results for the fourth index, COMM, were disappointing in this regard, in that they were at best marginal. The COMM index, in fact, would be discarded at this point along with RACSEP and COMMD if internal consistency were the only information available.

Equally important, however, is the information concerning relationships with the demographic variables. Each related at a highly significant level to a number of important characteristics of personnel and, even more pertinent,

the patterns of relationships were virtually identical on three indices. This similarity of relationship pattern supports the theoretical premises of the project, in that the three indices are meant to represent areas of conceptual relevance to racial climate, each of which adds new information. Whether they are in fact measures of separate concepts or simply highly correlated measures of the same concept, racial climate, is an empirical question which can be largely answered by inspection of Table 15. This table, which presents the intercorrelation matrix among the indices for enlisted men, shows that the intercorrelations, while not nonsignificant, are also not particularly high. The percent of common variance, calculated from the square of the correlation, ranges from a high of 17.7 percent between the EROSN and COMM variables to a low of 3.8 percent between COMM and HOST.

With respect to the second goal, that of revalidation of basic results of the first phase, the pattern of relationships found between the indices and the demographic variables in Phase II almost exactly replicated that reported for the two indices which had been most strongly defined in Phase I. In addition, the factor analytic results bear marked resemblance to those of Phase I. In sum, the analyses to this point support the results reported in Phase I and in so doing also give further credence to the theoretical framework under which both projects were designed.

PRCI Interrelationships at the Company Level. Data on the index refinement and the relationship of the indices to demographic variables were analyzed and presented on an individual basis, i.e., the unit of analysis was the individual respondent. The major purpose for the development of the indices, however, was to allow the assessment of racial climate factors at the aggregate level, e.g., for a company, a battalion, etc. In the design of this phase, the company was selected as the unit to be studied, and the sampling plan called for the selection of 24 companies from each of five posts. For each company selected, responses were solicited from five black enlisted men, five white enlisted men, two NCOs, and the company commander. For comparison purposes, it was desirable to have available three distinct sets of PRCI indices representing the officers, the NCOs, and the enlisted men. The officers' PRCI indices, of course, were simply those computed from the responses of the single officer who responded. For NCOs, the score on an index was obtained by summing across black and white EMs separately and then weighting this contribution to the composite EM score by their proportion of company strength at the time data were collected.

As was true in the section on demographic comparisons, all means reported in this section have been scaled so that the possible values for an index score are the same as those for a single item within that index. Thus, for example, a reported HOST index score of 3.45 for NCOs across all companies would indicate that the mean response of all NCOs, taken across all men in the NCO sample and all items in the HOST scale, was 3.45. Possible responses on any single item, of course, could range from 1 to 5, with all items being scored in such a way that the higher values indicated more negative racial climate.

The first question investigated in the company comparisons was the degree to which the three different sources (officers, NCOs, and EMs) tended to agree in their perception of racial climate in their company. There were two ways in which disagreements might occur. The first of these was in terms

Table 15
Intercorrelation Matrix of Four PRCI Indices
for Enlisted Men

	<u>EROSN</u>	<u>RACSOL</u>	<u>HOST</u>	<u>COMM</u>
EROSN	--			
RACSOL	.346	--		
HOST	.349	.372	--	
COMM	.421	.195	.195	--

of mean level of response. Thus, for example, it was quite possible, and theoretically reasonable, to expect that officers and NCOs might generally perceive the racial climate in their companies as being more positive than did the enlisted men under them. As the rank analysis in the section on demographics showed, this result did in fact occur for each of the four indices of concern, EROSN, RACSOL, HOST, and COMM.

Even though differences in mean levels of indices occurred among men of different ranks, it was possible that there could be high agreement among them in a relative sense when comparisons were made across all 113 companies. In this case, even though the officer of a given company may have somewhat higher index scores than his NCOs, his perceptions of the company's racial climate relative to those of other officers of their companies may agree closely with his NCOs' perceptions relative to those made by other NCOs of their companies. Thus, the mean difference would act as a constant and one would find a high correlation across the 113 companies between officers' and NCOs' index scores. The second and more fundamental disagreement in perceptions occurs if this correlation is not found; it indicates not simply a constant bias among groups in index scores but that the perceptions are not based upon the same underlying processes.

The results of the major analyses relevant to this second area of possible disagreement are presented in Table 16. This table contains the matrix of intercorrelations among the four indices for the weighted enlisted men sample, the NCOs, and the officers. To the extent that there is a consensus of perceptions of racial climate, one would expect to find high coefficients in those sections of the table in which correlations between samples for the same index are presented. This is not the case. For two of the indices, EROSN and COMM, none of the correlations between samples is significantly different from zero. For the other two, RACSOL and HOST, the correlations between the EM scores and the NCO scores, and those between the EM scores and the officer scores, are significant, while those between NCO scores and officer scores are not. Even when the level of correlation reaches significance, however, the correlations are not large, never exceeding a value of +.218. Thus, the degree of agreement among EMs, NCOs, and officers about relative levels of racial climate as measured by the PRCI indices is small.

A second question, answerable from the same data, was whether the three sources--EMs, NCOs, and officers--even saw the same structure among the PRCI indices; i.e., whether the patterns of intercorrelations among the four indices for EMs were similar to those of NCOs and officers. The relevant correlations have been abstracted from the large matrix of Table 16 and presented for officers, NCOs, and EMs in Tables 17, 18, and 19, respectively. Inspection of these tables shows that the patterns of correlations among the indices are similar for the three sources, although there are some differences. All three groups perceived interracial hostility and erosion of command authority as being strongly related ($r = .527$, $r = .349$, and $r = .556$ for officers, NCOs, and EMs, respectively). RACSOL and COMM also are significantly correlated with EROSN scores for all three groups, although only for the EMs does the correlation approach the level of that between EROSN and HOST. The correlations between COMM and RACSOL, and COMM and HOST are, for all three groups, generally significant but modest in size. Finally, the correlation between racial group solidarity and interracial hostility is the largest in the matrix for EMs ($r = .614$), while the corresponding

Table 16

Product-moment Correlations^{a,b} of PRCI Scores
among Enlisted Men, NCOs, and Officers

(\bar{n} for EMs=113; \bar{n} for NCOs=113; \bar{n} for Officers=109)

	EROSN			RACSOL			HOST			COMM		
	EMs	NCOs	OFFs	EMs	NCOs	OFFs	EMs	NCOs	OFFs	EMs	NCOs	OFFs
<u>EROSN</u>												
EMs	--											
NCOs	-.093	--										
OFFs	.052	.093	--									
<u>RACSOL</u>												
EMs	.428	-.073	-.018	--								
NCOs	-.062	.215	.028	.193	--							
OFFs	.233	-.109	.223	.172	-.064	--						
<u>HOST</u>												
EMs	.556	-.075	-.026	.614	.120	.039	--					
NCOs	.065	.349	-.138	.118	.399	-.093	.215	--				
OFFs	.182	.038	.527	.200	.028	.259	.218	.004	--			
<u>COMM</u>												
EMs	.438	.108	-.156	.212	.088	.007	.242	.200	.022	--		
NCOs	-.012	.263	.037	-.053	.314	-.194	-.019	.277	.037	.120	--	
OFFs	.011	-.006	.242	-.064	.053	.079	-.037	-.020	.279	.044	.092	--

^a $r_{.05} = .152$.

^b Sample size for a correlation is the smaller of the sample sizes associated with the two variables.

Table 17

Product-Moment Correlations among PRCI Scores for Officers^a

(n=109)

PRCI Score	PRCI Score			
	<u>EROSN</u>	<u>RACSOL</u>	<u>HOST</u>	<u>COMM</u>
EROSN	--			
RACSOL	.223	--		
HOST	.527	.259	--	
COMM	.242	.079	.279	--

^a $\underline{r}_.05=.152.$

Table 18

Product-Moment Correlations among PRCI Scores for NCOs^a

(n=113)

PRCI Score	PRCI Score			
	<u>EROSN</u>	<u>RACSOL</u>	<u>HOST</u>	<u>COMM</u>
EROSN	--			
RACSOL	.215	--		
HOST	.349	.399	--	
COMM	.263	.314	.277	--

^a $\underline{r}_.05=.151.$

Table 19

Product-Moment Correlations among PRCI Scores for Enlisted Men^a

(n=113)

PCRI Score	PCRI Score			
	<u>EROSN</u>	<u>RACSOL</u>	<u>HOST</u>	<u>COMM</u>
EROSN	--			
RACSOL	.428	--		
HOST	.556	.614	--	
COMM	.438	.212	.242	--

^a $r_{.05} = .151.$

correlations are significant but relatively small for NCOs and officers ($r = .399$ and $r = .259$, respectively). Over and above the basic similarities in matrices, then, the enlisted men perceived stronger relationships between erosion of command authority and the racial group solidarity and community factors than did the officers and NCOs, as well as perceived a stronger relationship between racial group solidarity and interracial hostility.

In summary of these results, then, the three groups tended to perceive the relationships among the four factors contributing to racial climate in basically similar fashions, but at the same time tended to disagree about the relative levels of those factors in their companies. Since they came from the same companies, it would appear that they must have been interpreting the same events and conditions in substantially different ways with respect to racial climate.

Relationships Between PRCI Indices and Company Record Variables

Each company in the final sample was asked to complete an Inventory of Company Status dealing with company characteristics and with disciplinary problems and the resulting actions taken against the offenders. It originally was planned that responses to these Inventories would form the basis for construction of Secondary Racial Climate Indices to correspond to each of the perceptually based PRCIs. The difficulties of obtaining such data on any level higher than the company were detailed in the Phase I report; such difficulties generally did not occur in the current project and usable data were in fact obtained for 113 of the 120 companies. Information on AWOLs, Article 15s, bars to reenlistment, rehabilitation assignments, correctional custodies, restrictions, and flagging actions then were converted to rates adjusted for company size.

The rates next were examined with respect to their numerical properties to assess their appropriateness for use in constructing SRCI indices. The obtained rates generally were low, ranging from means of less than 1 percent of the company to a maximum of 7.4 percent for forfeiture or detention of pay as a punishment for Article 15 violations. Thus, the rate distributions across companies tended to be highly skewed, with many companies having zero rates of occurrence for many of the items. The resultant restriction of range on a number of the variables made the data generally inappropriate for the analytic techniques which would have been necessary to form sound secondary indices. Accordingly, it was decided to examine the relationships of the PRCI indices to each usable class of infraction and punishment data separately. In this way the basic validity of the PRCI indices as concomitants of the disciplinary problems assumed to be closely related to negative racial climate still could be effectively examined.

Originally, 52 relevant rates were derived from the inventory data, 11 dealing with company composition and 41 with regulation infractions and the resultant actions taken. On 26, or 50 percent, of these rates, more than half of the companies showed zero rates of occurrence, and the variables thus were deemed inappropriate for further analysis. Data on the other 26 variables, 9 from the company composition variables and 17 from the infractions and resultant actions category, were correlated with the PRCI scores for

enlisted men, NCOs, and officers. Of the excluded rates, 14 dealt with Article 15 administration for specific offense categories, 3 with specific but infrequent punishments administered for Article 15s, 7 with infractions or punishments administered for Article 15s, 7 with infractions or punishments of other kinds, and 2 with company composition. The only excluded punishment categories were bars to reenlistment, rehabilitation assignments, and correctional custodies.

Significant correlations for the acceptable rates are presented in Tables 20, 21, and 22 for enlisted men, NCOs, and officers, respectively. For the EM sample, 4 of the 9 composition variables were significantly related to 1 or more of the PRCI indices, and 6 of the 17 discipline variables also were significantly related to the PRCI indices. Five significant relationships were found with EROSN, 7 with RACSOL, 5 with HOST, and only 1 with COMM. All of the 14 significant relationships with discipline rates were such that increased occurrence of infraction or disciplinary action was associated with more negative racial climate as perceived by the enlisted men.

Four of 9 composition variables and 11 of 17 discipline variables were significantly correlated with PRCI scores for the NCO sample. Six significant relationships were found with EROSN, 5 with RACSOL, 7 with HOST, and 3 with COMM. As was true for the EM sample, all of the significant relationships with discipline variables, of which there were 14, associated greater occurrence with more negative racial climate.

For the officer sample, 3 of the 9 composition variables and 10 of the 17 discipline variables were found to be significantly related to the officers' PRCI scores. There were 8 significant relationships with EROSN, 4 with RACSOL, 1 with HOST, and 3 with COMM. Most striking, however, was the direction of the relationship between discipline variables and the officers' PRCI scores: 11 of the 12 significant correlations were such that the higher the rate, the less the perception of negative racial climate.

Several features of these findings should be noted. The first is that the basic validity of the PRCI indices is amply supported by the number of relationships found, although to different degrees for the various indices. Across the three groups, 19 significant correlations were found with EROSN, 16 with RACSOL, 13 with HOST, and only 7 with COMM. Even the latter, however, represents more than 10 percent of the possible relationships found to be significant.

The second salient characteristic of these findings is the broad variety of company variables that were related to PRCI scores. Company composition, rates of AWOLs, rates of restrictions, flagging rates, rates of arrests and confinements, rates of impositions of extra duty, rates of forfeitures or retentions of pay, rates of reductions in grade, overall rates of Article 15 impositions as well as specific Article 15 impositions for AWOL and failure to obey orders all were found to be related to PRCI scores for one or more of the rank classifications. In short, the indices appear to be highly sensitive to the occurrence of specific, measurable events in the company.

A third important point concerns the pattern of relationships found between disciplinary rates and PRCI scores. While the significant relationships

Table 20

Significant Correlations of Enlisted Men's PRCI Scores
with Inventory Rates

(n=113)

Rate or Variable	Correlation with			
	<u>EROSN</u>	<u>RACSOL</u>	<u>HOST</u>	<u>COMM</u>
Percentage of Whites		-.16		
Rate of Change in Strength	+.26	+.17		
Percent Black E1-E4				+.20
Rate of White Article 15s			+.15	
Rate of Black Article 15s		+.23	+.20	
Rate of White Restrictions	+.17	+.20	+.20	
Rate of Black Restrictions	+.21	+.32	+.20	
Rate of White Flagging Actions		+.19		
Rate of Restrictions as Article 15 Punishment	+.20	+.21	+.22	
Rate of Forfeiture of Pay as Article 15 Punishment	+.17			

Table 21
Significant Correlations of NCOs' PRCI Scores
with Inventory Rates

(n=113)

<u>Rate or Variable</u>	<u>Correlation with</u>			
	<u>EROSN</u>	<u>RACSOL</u>	<u>HOST</u>	<u>COMM</u>
Percentage of Whites		-.17		
Percentage of Blacks		+.19		+.17
Rate of Change in Strength		-.24		
Percent Black E1-E4		+.19		+.18
Rate of Arrest and Confinement		+.18	+.16	
Rate of White AWOL				+.17
Rate of Black AWOL	+.19			
Rate of Black Article 15s			+.22	
Rate of Black Restrictions			+.19	
Rate of Black Flagging Actions	+.17			
Rate of Article 15s for AWOL	+.20			
Rate of Article 15s for Failure to Obey			+.18	
Rate of Extra Duty as Article 15 Punishment	+.21		+.21	
Rate of Grade Reduction as Article 15 Punishment	+.21		+.23	
Rate of Forfeiture of Pay as Article 15 Punishment	+.26		+.25	

Table 22

Significant Correlations of Officers' PRCI Scores
with Inventory Rates

(n=109)

<u>Rate or Variable</u>	<u>Correlation with</u>			
	<u>EROSN</u>	<u>RACSOL</u>	<u>HOST</u>	<u>COMM</u>
Rate of Change in Strength	+.18			
Percentage of Black E5-E6		-.17		+.18
Rate of White Arrest & Confinement	-.17			
Total AWOL Rate		-.18		
White AWOL RATE			+.16	
Rate of Article 15s for Whites	-.24			-.18
Rate of Article 15s for Blacks	-.16			
Rate of Black Flagging Actions				-.16
Rate of Article 15s for AWOL	-.17	-.18		
Rate of Article 15s for Failure to Obey	-.17			
Rate of Restrictions for Article 15 Punishments		-.20		
Extra Duty Rate for Article 15 Punishments	-.25			
Pay Forfeiture Rate for Article 15 Punishments	-.17			

appeared to be equally distributed across EROSN, RACSOL, and HOST (4, 5, and 5, respectively) for the EM sample, this was not true for the NCO or officer samples. For the NCOs, 12 of the 14 relationships were with EROSN or HOST, while for the officers, 10 of 13 were with EROSN or RACSOL. These patterns provide strong support for an interpretation made in a previous section: although the perceived relationships among the PRCI indices are similar among the three groups, the determinants and concomitants of index levels vary radically for EMs, NCOs, and officers.

The most striking feature of obtained data, however, had to do with opposing perceptions of the same occurring events by officers on the one hand, and EMs and NCOs on the other. From the preceding analyses it is clear that officers almost uniformly saw the occurrence of disciplinary infractions and resultant punishments as related to a more positive racial climate; EMs and NCOs saw the same events as being related to more negative racial climate. As a further test of this finding, all 41 of the disciplinary variables were examined for direction of relationship with the PRCI scores, a nonparametric procedure that does not depend upon the assumptions that led to the exclusion of 24 of them in the correlational analyses. The results are presented in Table 23. Chi-square tests on each of the four indices show that the difference in direction of association between the perceptual and disciplinary variables for officers versus EMs and NCOs is highly significant for all indices.

Strategy Analyses

The second section of the Soldiers' Perceptions Survey presented four hypothetical situations as existing for an Army company. These situations were described in terms of relatively high levels of erosion of command authority, interracial hostility, racial solidarity, and community hostility. Respondents were asked to rate, on 5-point bipolar scales, the effects of each of a number of possible command strategies on the racial climate portrayed. A rating of 3 indicated no change, a rating of 5 a definite change for the worse, and a rating of 1 a definite change for the better.

Although relationships of the strategy ratings to any of a large number of demographic and other variables could have been examined, only two types of analyses seemed theoretically relevant. The first was an examination of the data for patterns of strategy preference, and the second was an analysis of rank differences in strategy ratings to see if differences corresponding to other analyses also occurred.

Mean strategy ratings were calculated on each strategy separately for enlisted men, NCOs, and officers. The means for the strategies then were ranked in order of rated effectiveness for each described situation. The ranked order of group means and a brief description of the strategies are presented in Table 24 for a situation of interracial hostility, in Table 25 for a situation of erosion of command authority, in Table 26 for a situation of community hostility, and in Table 27 for a situation of displayed racial solidarity.

The results presented in the tables show general agreement as to the positive or negative impacts of strategies, where means smaller than 3.00

Table 23

Relationships among PRCI Scores, Rank,
and Disciplinary Data^a

<u>Index</u>	<u>EMs</u>	<u>NCOs</u>	<u>OFFICERS</u>	<u>χ^2</u>	<u>p</u>
EROSN	28/41	29/41	7/41	30.16	<.001
RACSOL	33/41	26/41	16/41	13.14	<.001
HOST	36/41	34/41	18/41	22.28	<.001
COMM	21/41	23/41	12/41	6.75	<.05

^aData entries are number of relationships where increasing disciplinary actions are positively related to negative racial climate levels/total relationships examined.

Table 24

Means, Rank Orders, and ANOVA^a Results, by Rank, for Ratings of Effectiveness of Command Strategies to Deal with Interracial Hostility

Item #	Command Strategy	EM (n=1033)		NCO (n=211)		Officer (n=115)		ANOVA by Rank	
		Mean	Rank	Mean	Rank	Mean	Rank	F	p
71	Talk with individuals having problems	2.77	1	2.24	1	1.55	1	50.5	<.01
78	Talk with minority group leaders	2.83	2	2.62	5	1.88	3	24.5	<.01
70	Hold RAP session	2.96	3	2.53	3	2.07	5	28.6	<.01
82	Use bulletin board to show disciplinary actions	3.01	4	2.57	4	2.00	4	40.0	<.01
81	Investigate all rumors of discrimination	3.06	5	2.42	2	1.79	2	61.2	<.01
68	Ask Race Relations Office for assistance	3.15	6	2.90	7	2.60	8	14.8	<.01
69	Ask IG office for assistance	3.24	7	3.11	9	3.14	9	1.25	n.s.
72	Use chain of command to handle problems	3.35	8	2.63	6	2.33	6.5	56.4	<.01
77	Break up racial groupings	3.45	9	3.30	10	3.59	11	4.62	<.05
79	Segregate minority leaders	3.46	10	3.43	12	3.75	12	24.5	<.01

(Continued)

Table 24 (Continued)

Item #	Command Strategy	EM (n=1033)		NCO (n=211)		Officer (n=115)		ANOVA by Rank	
		Mean	Rank	Mean	Rank	Mean	Rank	F	p
76	Vigorously prosecute assaults	3.49	11	2.93	8	2.33	6.5	47.5	<.01
73	Request Battalion Commander to charge men involved	3.64	12	3.37	11	3.57	10	3.49	n.s.
74	Discipline complaining individuals	3.64	13	3.83	13	4.43	13	15.2	<.01
75	Call in MP's	3.75	14	3.95	14	4.66	15	22.2	<.01
80	Restrict all personnel to barracks	3.93	15	4.12	15	4.61	14	12.5	<.01

^aANOVA stands for analysis of variance.

Table 25

Means, Rank Orders, and ANOVA^a Results, by Rank, for Ratings of Effectiveness of Command Strategies to Deal with Erosion of Command Authority

Item #	Command Strategy	EMs		NCOs		Officers		ANOVA by Rank	
		Mean	Rank	Mean	Rank	Mean	Rank	F	p
92.	Investigate complaints of unfair treatment	2.20	1	1.67	1	1.54	2	28.4	<.01
91.	Get advice of EM leaders	2.27	2	2.00	4	2.04	4	5.78	<.05
87	Eliminate unfair policies	2.34	3	1.74	2	1.41	1	42.9	<.01
85	Talk with personnel complaining	2.41	4	1.94	3	1.83	3	22.1	<.01
84	Hold RAP sessions	2.43	5	2.12	5	2.06	5	9.49	<.01
93	Use bulletin board to show disciplinary actions	2.71	6	2.37	7	2.10	6	16.4	<.01
83	Call IG office for assistance	2.82	7	2.93	8	3.03	8	1.78	n.s.
86	Use chain of command to handle problems	3.02	8	2.26	6	2.31	7	45.8	<.01
90	Segregate complaining individuals	3.41	9	3.64	4	3.92	9	9.3	<.01

(Continued)

Table 25 (Continued)

Item #	Command Strategy	EMS		NCOs		Officers		ANOVA by Rank	
		Mean	Rank	Mean	Rank	Mean	Rank	F	p
88	Discipline complaining individuals	3.60	10	3.80	10	4.25	10	12.6	<.01
89	Call in MPs	3.69	11	3.96	11	4.43	11	15.8	<.01

^aANOVA stands for analysis of variance.

Table 26

Means, Rank Orders, and ANOVA^a Results, by Rank, for Ratings of Effectiveness of Command Strategies to Deal with Community Hostilities

Item #	Command Strategy	EMs		NCOs		Officers		ANOVA by Rank
		Mean	Rank	Mean	Rank	Mean	Rank	
95.	More recreation, etc, within company	2.22	1	2.01	4	2.43	6	5.2 <.05
100.	Talk with personnel complaining	2.24	2	1.83	1	2.00	2	13.6 <.01
98.	Get advice of EM Leaders	2.26	3	1.94	2	1.97	1	9.8 <.01
101.	Ask Battalion Commander for action	2.34	4	2.33	8	2.48	7	0.6 n.s.
97.	Hold RAP sessions	2.37	5	1.97	3	2.07	3	12.8 <.01
94.	Ask Race Relations Office for assistance	2.62	6	2.13	5	2.50	8	16.3 <.01
103.	Have trouble spots declared off-limits	2.83	7	2.23	6	2.23	4	22.3 <.01
99.	Use chain of command to handle problems	2.92	8	2.26	7	2.40	5	32.7 <.01
96.	Discipline personnel having community problems	3.16	9	2.90	9	2.90	9	5.2 <.05
102.	Restrict all personnel to post	3.91	1	4.15	1	4.43	1	9.3 <.05

^a ANOVA stands for analysis of variance.

Table 27

Means, Rank Orders, and ANOVA^a Results, by Rank, for Ratings of Effectiveness of Command Strategies to Deal with Racial Group Solidarity

Item #	Command Strategy	EMS		NCOs		Officers		ANOVA by Rank	
		Mean	Rank	Mean	Rank	Mean	Rank	F	p
111.	Make racially mixed barracks assignments	2.77	1	2.77	2	3.46	5	15.02	<.01
108.	Use chain of command to watch problems	2.80	2	2.72	1	2.84	2	0.52	n.s.
109.	Report groupings to Race Relations Office	2.85	3	2.88	4	2.88	3	0.06	n.s.
110.	Make racially mixed duty assignments	2.86	4	2.82	3	3.43	4	10.9	<.01
107.	Discipline personnel in racial groups	3.11	5	3.07	5	4.26	8	29.5	<.01
105.	Break up racial groups	3.16	6	3.25	7	3.72	7	7.9	<.05
104.	Segregate minority group leaders	3.19	7	3.19	6	3.82	6	11.0	<.01
106.	Hold RAP sessions	3.45	8	3.39	8	2.76	1	15.6	<.01

^aANOVA stands for analysis of variance.

indicate positive effects and means larger than 3.00 indicate negative effects. Officers, NCOs, and enlisted men all agreed upon the directional impact of 11 of the 15 strategies for the interracial hostility situation (73.4 percent), on 9 of the 11 strategies for erosion of command authority (81.8 percent), on 9 of 10 for community hostility (90.0 percent), and on 5 of 8 for racial groupings (62.5 percent).

To assess agreement on specific orders of rated strategy effectiveness, Spearman Rho rank-order correlations were calculated among the rank orders of the three groups of respondents for each situation. The obtained correlations are presented in Table 28. In the interracial hostility and erosion of command authority situations, agreement among the three groups as to the effectiveness of strategies was high, with all correlations exceeding +0.90 in value. Agreement on effective strategies for the community hostility situation was not as high, although the reported correlations still were uniformly significant and in all cases were +0.59 or larger. The racial grouping situation was the only one in which there was no consensus among all three levels of rank. In that situation, the overall strategy preference ranking of officers bore no significant relationship to those of either the NCOs or enlisted men, although the correlation between the rankings of the latter two groups was +0.93.

Clear and consistent patterns of effectiveness ratings by NCOs and enlisted men appear in a similar fashion for all four situations. Strategies generally considered to be effective tend to be nonthreatening and nonpunitive in nature, e.g., talking with the individuals having problems or with EM leaders, asking the Race Relations office for assistance, holding Rap sessions, using platoon leaders or NCOs to monitor the situation, etc. Those strategies generally perceived to worsen the situation, on the other hand, tended to be punitive or restrictive and likely to disrupt the proper functioning of the company, e.g., restricting personnel to the barracks, disciplining the individuals involved in a problem situation, calling in the MPs, etc. For three of the four situations, the same patterns also can be observed for the officers' ratings; the exception was the racial grouping situation, in which the strategy rated most effective by officers was that of taking disciplinary action against those involved. The same strategy was rated least effective by both enlisted men and NCOs.

In considering the rank orders of strategies, it is important to recognize that they represent estimates of likely effectiveness in hypothetical situations and that the highly rated strategies would not necessarily be the most effective ones for actually modifying an existing situation. On the other hand, because the four situations used were deliberately designed to represent relatively negative conditions for each of the four PRCI indices, it is reasonable to assume that the implementation of a given strategy in a company would likely produce the indicated changes in individual perceptions of the racial climate, at least on a short-term basis. In addition, because the officers' ratings were obtained from the men who would likely decide which strategies to implement, it is likely that their rankings approximate the frequency with which they would be likely to choose a given strategy in situations similar to those described. Thus, to the extent that the officers' ratings are different from those of their men, the strategies which they might be disposed to apply in certain situations are ones which even might make these situations worse.

Table 28

Rank-Order Correlations of Strategy Effectiveness
Ratings for Four Situations

<u>Situation</u>	<u>N</u>	<u>EMs and NCOs</u>	<u>EMs and Officers</u>	<u>NCOs and Officers</u>
Interracial Hostility	15	0.93	0.99	0.97
Erosion of Command Authority	11	0.95	0.95	0.98
Community Hostility	10	0.79	0.59	0.85
Racial Groupings	8	0.93	0.10	0.17

One difference in enlisted men's and officers' ratings of strategies already has been reported--the officers' preferred strategy for dealing with the formation of racial groupings (initiation of Rap sessions) was the one judged to be least effective by the enlisted men. Less obvious but possibly an equally important difference can be noted in the analyses of variance of differences in rated effectiveness for strategies presented in Tables 24 through 27. Significant differences appeared for 38 of the 44 strategy comparisons in a highly systematic fashion. On 30 of the 38 significant comparisons, all three groups (officers, EMs, and NCOs) agreed upon the direction of effect of a given strategy, i.e., that it would worsen or better the situation. Of the 16 significant comparisons in which all agreed that implementation of a strategy would better the climate, there were 15 in which officers estimated that the strategy would be more effective than did enlisted men. Of the 14 significant comparisons in which all three groups agreed that implementation of a strategy would worsen a situation, there were 12 in which officers estimated that the strategy would be more harmful than did enlisted men. For 27, or 90 percent, of the 30 cited comparisons, then, officers rated the strategy as having more impact on the situation than did enlisted men.

A general theme found in early analyses was clearly repeated in the current data, in that the perceptions of company commanders, and to a more limited extent of their NCOs, differed from those of the men they command. Training in the recognition of those differences would appear most appropriate, and a computer simulation of the racial climate model was designed with such training as a major goal.

Summary of Results

The results reported in this section provide support for the racial crisis model underlying the design and conduct of the project. During Phase I, four theoretical constructs which the literature suggested account for the development of racial climate received empirical support by the demonstrated relationships between initial racial climate indices and a variety of relevant variables through the use of crude measuring instruments. The first series of Phase II analyses verified the existence of the four PRCI indices and replicated the reported relationships of these indices with a variety of demographic characteristics of individual Army respondents, while at the same time permitting refinement of the indices into concise, consistent measurement tools.

In the examination of the data derived from company records, a number of theoretically expected relationships were found between the PRCI indices and a broad variety of company composition characteristics and disciplinary rates. As was true in the investigation of relationships between the PRCI indices and individual demographic variables, substantial and systematic differences were found to be a function of military rank. Both the perceived pattern of relationships among the four factors contributing to company racial climate and the relationships of these factors to other nonperceptual variables were appreciably different for personnel with different ranks, a finding only suggested by Phase I results. Enlisted men, NCOs, and officers each clearly recognized the relevance to racial climate of interracial hostility, erosion of command authority, racial group solidarity, and, to a

limited extent, community hostility; yet the level of negative climate each of these three groups perceived to exist in a given company was systematically different, as was the perceived relationship of this climate to disciplinary actions taken by the company commander.

The results of analyses on strategy data confirmed and extended those reported for company records. As before, large areas of similarities were found; yet systematic rank-related differences in ratings of strategy effectiveness also were discovered. Officers consistently rated potential actions they might take to alleviate racial tension as having greater impact than did enlisted men, regardless of whether the impact was favorable or unfavorable. In some cases officers' estimates of the direction of impact also varied radically from those of enlisted men and NCOs.

Over and above the consistent support for the conceptualization of the factors from which racial climate is derived, then, one consistent theme emerged: officers' perceptions of the racial climate of their companies are not always the same as those held by the men they command. To the extent that these differences reflect a lack of awareness by officers of their men's perceptions, the ability of these officers to alter the company environment in such a way as to create a more positive racial climate in the eyes of their men may be diminished. The development of a computer simulation of the parameters of the racial climate model, which could be used as a training device to educate officers and others as to the determinants of enlisted men's perceptions, was supported by the results.

COMPUTER SIMULATION OF RACIAL CRISIS MODEL

Introduction

The simulation phase of the project involved designing an on-line, interactive simulation package which can model the racial climate of an Army unit as measured by the perceptions of the men in the unit. In addition, it will simulate the effect of a variety of prevention and intervention strategies on the racial climate.

The simulation model can be used by analysts, researchers, or commanding officers to derive inferences relating to racial crisis prediction, prevention, and intervention. By applying various command strategies (selected by the user) on various conflict situations (generated by the computer or selected by the user) and examining the simulated impact on racial climate, the user may gain new insights to better deal with real conflict situations.

The simulation converses with the user in plain English. No knowledge of computers or computer language is necessary. The simulation could be made available for use anywhere there is a telephone and a teletype or CRT terminal.

What follows is a detailed discussion of the simulation and the technique used to create it. Some examples of simulation output and a brief discussion of results are also included.

Elements of a Simulation

The simulation of a social system is a complex task that can be approached in a variety of ways. In deciding which approach to use, it is necessary to consider the nature of the system to be simulated, the nature of the data which are available about the system and the use to which the simulation is to be put. But regardless of the specific approach, the basic steps are similar. First, one must determine what the significant variables are and what their relationships are, i.e., how a change in one variable affects the others. This set of relationships can be referred to as the model. For computer simulation, an additional step is necessary. The variables must be quantified and the relationships between them must be expressed as a set of logical or mathematical expressions. The computer uses these expressions to modify the values of the simulation variables. Thus, if all relevant variables have been accurately quantified, and if all the relationships between the respective variables have been accurately described, then, as the computer operates on the values of the variables, those values will change with the same magnitude and direction as actual measurements made in a real situation.

Such accuracy can often be obtained when describing a simple system; however, when a complex system such as racial climate is involved, it is impossible to identify all the relevant variables. One way to compensate for this is to build into the simulation a random effect which represents all unknown factors operating in the system being simulated. When this is done, the simulation output loses its exact correspondence to reality and instead represents an outcome which is likely to occur. Because of this random effect, the simulation output will differ somewhat each time the simulation is run. Such a simulation cannot be used to predict particular events but will show the development of trends and can be used to explore complex relationships.

Since the simulation does not produce exactly the same result each time, it more closely mirrors the functioning of a real system. This is especially true of a social system, where a given set of conditions can often result in a radically different outcome due to uncontrolled and unrecognized situational variables.

When random techniques are used, the simulation variables are usually described in terms of probabilities. Random numbers are generated by the computer and compared with the probability of the variables to determine their effect.

Elements of the Racial Crisis Simulation

After examining the nature of the system to be simulated (racial climate) and data available about the system (results of the Soldiers' Perceptions Survey), a random technique was selected similar to the one described above. The technique lends itself well to two assumptions which were stated in Phase I. These assumptions, on which the model itself is based, are as follows:

1. "...racial climate can be defined in terms of individuals' perception of precedent and antecedent conditions."

On the basis of this assumption, the items from the survey concerning individuals' perception (the PRCI items) are used in the model as the simulation variables. Together, the values of these variables at any one time describe the racial climate for that moment in the simulation.

2. "...when racial climate is positive or neutral, the possibility of racial incidents of any kind decreases. As the racial climate...becomes increasingly negative, the frequency and seriousness of overt racial disturbances will increase."

As a result of this assumption, the simulation variables are expressed in probabilities of racial incidents occurring. The probabilities are compared against random numbers to determine which events will occur. Thus as the racial climate improves, the probabilities that are generated by the simulation will decrease, causing fewer events to occur.

A third assumption made in Phase I is useful in interpreting simulation output.

3. "...major racial disturbances, rather than being a unique class of events, represent an extreme upper limit of the dimension of racial climate."

Since part of the output of the simulation is a list of events which have occurred in the simulated climate, its length can be considered a rough indicator of the current position of the simulation along the "dimension of racial climate." Therefore, the only simulation output which can be interpreted as a major racial disturbance is a very long list of events, one which encompasses almost all of the possible events. Smaller lists occupy lower positions on the continuum of racial climate.

Besides the events, the simulation contains two other basic elements, Intervention Strategies and Racial Climate Indices (RCI). The origins of these elements and their relationships within the simulation will be discussed below.

Method

System Flow of the Simulation

The simulation is structured in a number of consecutive rounds, with each round embodying a single use of a set of both the basic Event and Strategy elements. The simulation begins with the display of four RCIs which reflect the underlying racial climate in which the events occur. Following the RCIs, the user may either select a series of events he would like to have occur or allow the simulation to generate a list of events likely to occur in the climate. The list, which represents an overt expression of racial climate, may be thought of as a description of recent racially related events or conditions which have occurred in an Army unit. At this point the simulation user selects intervention strategies to be applied to

the racial climate. The effect of each user-selected strategy on the racial climate is calculated, applied by the simulation, and displayed to the user immediately. After the last strategy has been entered, a new climate exists. The state of the new climate is displayed to the user through a new list of events and a new list of RCIs. A flow chart of this process is shown in Figure 1.

This cycle constitutes one round of the simulation. At this point, the user can go on to another round and generate a new list of events based on the results of the previous round or back up and apply a new set of strategies to the old climate.

Origins of the Basic Elements

Events. The foundation of the model is the event structure. The events are a series of statements describing events or conditions related to racial climate. A major part of the output of the simulation consists of a display of events that have occurred in the simulation climate. This is accomplished by assigning a probability of occurrence to each potential event. This table of probabilities is compared against the output of a random number generator with the same range as the numbers in which the probabilities of occurrence are expressed. If the random number is less than or equal to the probability of the event occurring, the phrase which describes the event is displayed to the user, and the event is said to have occurred.

The probabilities are expressed in the range between 0.00 and 1.00, inclusive. If the probability of an event occurring in a given round is 1.0, then the event will always occur. On the other hand, if the probability is 0.0, the event will never occur. The probability (p) can take on any value within the range, and the frequency of an event occurring will vary accordingly. Thus, if $p = .5$, the event will occur in about half the rounds of the simulation; if $p = .75$, the event will occur about three-fourths of the time or 75 percent; if $p = .25$, it will occur one-fourth of the time or 25 percent, etc.

The event list and the initial probabilities for that list are derived from the items in section 1 of the Soldiers' Perceptions Survey, the PRCI items. Since items on the questionnaire describing events were scaled from "Never" (1) to "Very frequently" (5) it is possible to think of these scores as indicators of how likely it is that an event will occur, which justifies their subsequent conversion into probabilities. (Note that the same assumption is made about items which were scaled from "Strongly agree" (1) to "Strongly disagree" (5). It is assumed that the more people who agree that a condition exists, the higher the probability of its occurrence.)

As a result of the factor and correlational analyses described earlier in the report, 54 of the 67 items were chosen for use as events because of their strong relationship to racial climate. Often the wording of these items was transferred directly into the simulation to form the descriptive phrase attached to the event. In other cases the wording was changed from positive to negative to make the item consistent with the fact that when an event occurs in the simulation, it is "bad," i.e., adversely affects racial

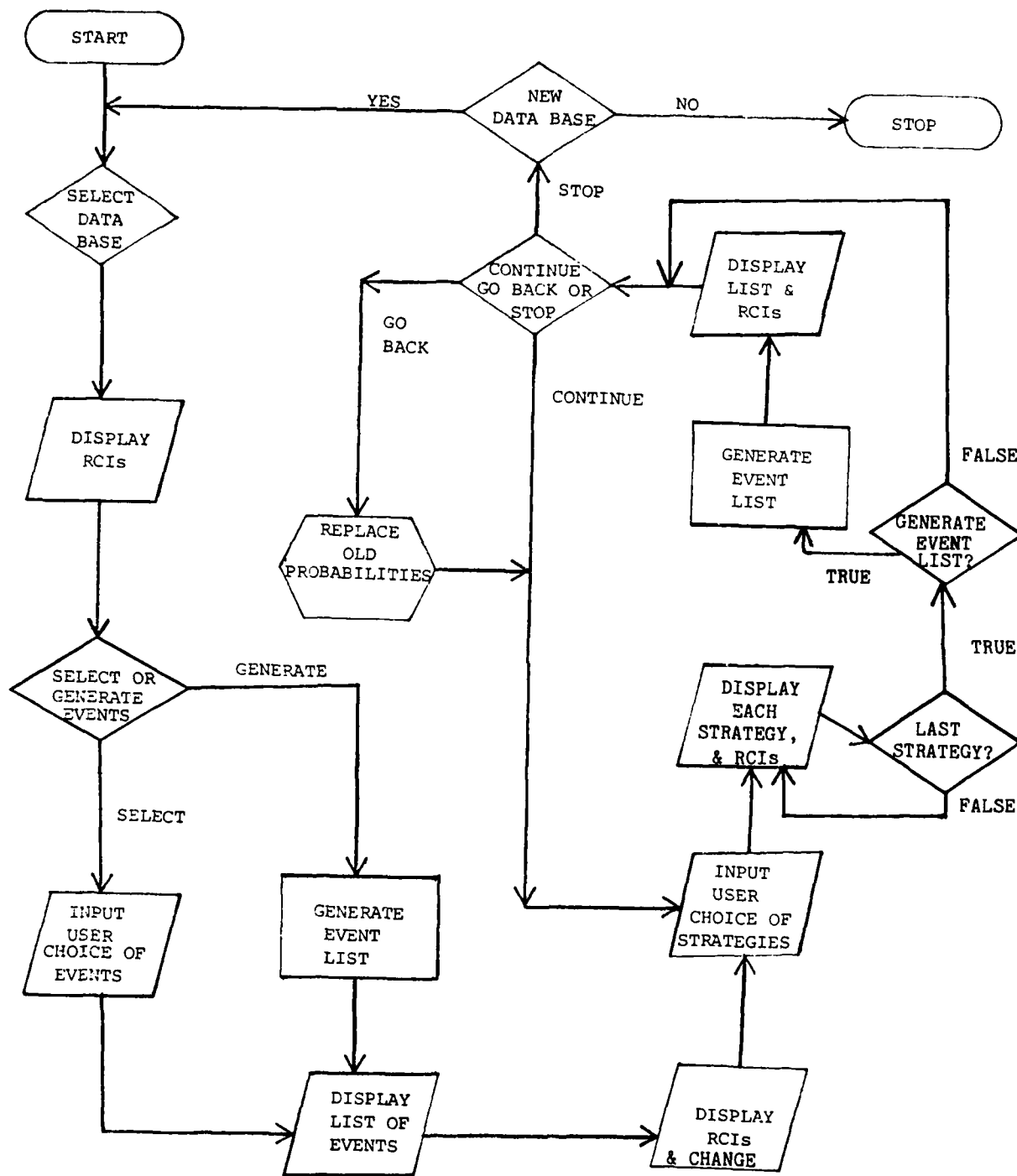


Figure 1. System Flow of the Simulation

climate. (It is important to note here that the nonoccurrence of an event is also significant and has a "good" effect on racial climate.) There was also some shortening of the items to improve the simulation output. Consequently, questionnaire item number 7, "You often see black and white soldiers going places together on this post," becomes "You seldom see black and white soldiers going places on this post" when displayed as an event.

Each event begins the simulation with an initial probability of occurrence which is modified as the simulation progresses. The initial probability for each event is derived from the actual responses on the corresponding PRCI item from the Soldiers' Perceptions Survey. Since the values in this part of the simulation (and also the strategy section) are based on actual data, it is possible to specifically select the data base from which the initial racial climate is created. To take advantage of this, the simulation as presently programmed can select 1 of 12 different samples: each of the five posts surveyed; a composite sample of all five posts; a selection of the companies that ranked in the top third of all companies on the sum of the ranks of the six item average factor scores; a selection that ranked in the bottom third, the top 10 percent of companies, the bottom 10 percent, the single best company, and the single worst company. These various samples are provided as a convenience to give the user a variety of climates from which to work.

It would be incorrect to assume that the output of the simulation represents a simulation of the unit from which the sample was taken. One can only say that the simulation, at its starting point, represents the perceptions of the men surveyed at the particular point in time the survey was administered.

Regardless of the sample chosen, the values for \underline{p} are calculated from the scores of enlisted men only. This is because it is the enlisted men's perceptions and actions the CO (the user of the simulation) wants to affect through his selection of strategies, not those of NCOs or fellow officers.

The values for the initial \underline{p} are calculated by a process that measures the deviation of the mean of the PRCI items in the particular sample from the item means of the entire EM sample (assumed to be the population for purposes of the simulation).

If a sample mean for a PRCI item is equal to the population means, the \underline{p} will equal .5; if the sample mean is above the population mean the \underline{p} will be greater than .5; and if it is below the population mean it will be less than .5. In the method used to calculate the actual value of \underline{p} the deviation of the sample mean from the population mean is expressed in units of standard deviation of sample size \underline{n} . This is called a standardized score. Thus a standardized score of -1.65 indicates that the mean of the sample was 1.65 standard deviations below the population mean.

The formula for this conversion is:

$$\underline{z} = \frac{\underline{m} - M}{S/\sqrt{n}}$$

where:

\bar{z} is the standardized score or normal deviate

\bar{m} is sample mean

\bar{M} is population mean

\bar{S} is the population standard deviation

n is the sample size

The standardized score itself does not yield a probability. However, by assuming that, for each item, the responses are distributed normally around the mean, it is possible to consider \bar{z} a normally distributed standard score, usually called a normal deviate. This normal deviate represents a point on the normal curve. To the left of this point, scores will be smaller; to the right of the point they will be larger. The size of these two areas is usually expressed in proportions; i.e., the proportions of the total area under the curve which are above or below a given point. It is the value of these proportions, in this case the proportion of area below a given point, which becomes the initial p for an event. The value for this proportion can be obtained by simply looking up the value of \bar{z} in a table of normal deviates. (In actual practice, a computer program which calculates the proportion from the value of \bar{z} is used.) Thus, if the standard score mentioned above, -1.65, is looked up in the table, one finds that 5 percent of the area under the normal curve is below this point. It is then assumed that the probability of drawing a single random sample from the population with $\bar{z} = -1.65$ (or in other words with a mean which is 1.65 standard deviations below the population mean) is .05. This value becomes the initial probability for the occurrence of an event.

There is one final quality of some but not all of the events in the simulation. They are identified as belonging to one of four item clusters, identified in the previous factor analysis. The events are attached to these item clusters because they were derived from PRCI items which were used in calculating the item-total factor indices. The item clusters and their corresponding PRCI factor names are Command Authority (EROSN), Racial Solidarity (RACSOL), Hostility (HOST), and Community Relations (COMMD), used because of predictability in the enlisted men sample. A list of the simulation events and the clusters to which they are attached are shown in Table 29.

Strategies. The strategies were taken from the Soldiers' Perceptions Survey. The 44 items in the survey which ask the respondent to rate strategies are divided into four sections, one for each of the four original Phase I factors, HOST, EROSN, RACSOL, and COMM, by the descriptive paragraphs that precede them. These paragraphs describe events relating to a particular factor. Therefore, it is possible to assume that when a respondent is rating a strategy under situation A (the HOST-related paragraph), the rating applies specifically to the effect of the strategy on events related to the HOST item cluster.

In the simulation, the application of a strategy affects only the events considered to be attached to the same cluster as the paragraph under which

Table 29

Simulation Events and Item Cluster Attachments

Item #	Item Cluster	Event
1.		NOT ENOUGH BARS, RESTAURANTS, AND NIGHTCLUBS OPEN TO SOLDIERS.
2.	RACOL	BLACK AND WHITE SOLDIERS GET TOGETHER ONLY ON DUTY ASSIGNMENTS.
3.		SOLDIERS ARE NOT ABLE TO GO OFF POST OFTEN ENOUGH.
4.	RACOL	SELDOM SEE BLACK AND WHITE SOLDIERS GOING PLACES TOGETHER ON POST.
5.	RACOL	BLACK SOLDIERS HAVE LITTLE IN COMMON WITH WHITE SOLDIERS.
6.		THERE ARE QUITE A FEW FIGHTS ABOUT RACIAL MATTERS ON POST.
7.	EROSN	NCOS AND OFFICERS ON POST DISCRIMINATE AGAINST EMS.
8.		THERE IS RACIAL DISCRIMINATION AGAINST BLACKS ON POST.
9.	EROSN	OFFICERS ARE NOT VERY RESPONSIVE TO EM GRIEVANCES.
10.	COMMD	EM CAN GET INTO A LOT OF TROUBLE WHEN OFF POST.
11.	RACOL	FEW BLACK SOLDIERS HAVE BOTH BLACK AND WHITE BUDDIES.
12.	COMMD	WHITE SOLDIERS TEND TO BE VERY SUSPICIOUS OF ANY GROUP OF BLACKS.
13.	EROSN	COMPLAINTS ABOUT DISCRIMINATION ARE TREATED UNFAIRLY.
14.	COMMD	IT IS NOT SAFE FOR A SOLDIER TO GO OFF POST ALONE.
15.		RACIAL TENSIONS STRONG, WIDESPREAD VIOLENCE COULD RESULT.
16.	COMMD	BLACK SOLDIERS CAN GET INTO A LOT OF TROUBLE WHEN OFF POST.
17.	EROSN	PROMOTIONS ARE BASED ON A SOLDIER'S RACE.
18.	COMMD	IT IS UNSAFE FOR A BLACK SOLDIER TO GO OFF POST ALONE.
19.	EROSN	THE LEAVE POLICY IS GENERALLY UNFAIR.
20.		MORE RACIAL DISCRIMINATION ON POST THAN IN CIVILIAN LIFE.
21.		NOT ENOUGH BARS, RESTAURANTS, AND NIGHTCLUBS OPEN TO BLACKS.
22.	RACOL	BLACK AND WHITE SOLDIERS SELDOM HAVE CLOSE RELATIONSHIPS.

(continued)

Table 29 (continued)

Simulation Events and Item Cluster Attachments

Item #	Item Cluster	Event
23.	EROSN	DUTY ASSIGNMENTS ARE OFTEN BASED ON RACE.
24.		THE ARMY NEEDS TO PROVIDE MORE FOR SOLDIERS ON POST.
25.		SOLDIERS ATTACK OTHER SOLDIERS VERBALLY.
26.	HOST	WHITE EM GANG TOGETHER TO KEEP BLACK EM OUT OF FACILITIES.
27.	HOST	UNFAIR TREATMENT AT PX, COMMISSARY, AND OTHER FACILITIES, BECAUSE OF RACE.
28.		EM UNWELCOME AT OFF-POST BARS, RESTAURANTS AND NIGHTCLUBS.
29.		BLACKS ON THIS POST STAY WITHIN THEIR OWN GROUP.
30.		WHITE SOLDIERS LET OTHER WHITES CUT IN ON THE MESS LINE.
31.	EROSN	PUNISHMENT AND DISCIPLINE ARE HANDLED UNFAIRLY.
32.	RACSOL	SOLDIERS GROUP TOGETHER IN THE BARRACKS BY RACE.
33.	HOST	WHITE OFFICERS HAVE TROUBLE HANDLING BLACK SOLDIERS.
34.		UNFAIR TREATMENT OF EM AT STORES, RESTAURANTS, OR NIGHTSPOTS.
35.		THE DAP AND OTHER RACIAL OR ETHNIC GESTURES ARE USED ON POST.
36.	HOST	THERE HAVE BEEN PHYSICAL ASSAULTS BY WHITE SOLDIERS IN THE COMPANY.
37.		BLACKS ARE UNWELCOME AT OFF-POST BARS, RESTAURANTS, AND NIGHTCLUBS.
38.	RACSOL	BLACK AND WHITE SOLDIERS DO NOT HANG AROUND TOGETHER AFTER DUTY.
39.	HOST	WHITE SOLDIERS MAKE FUN OF BLACKS' HAIR STYLE, MUSIC OR FOOD PREF.
40.		SOLDIERS ON THIS POST ARE HASSLED BY THE MILITARY POLICE.
41.	RACSOL	BLACK AND WHITE SOLDIERS DO NOT RAP TOGETHER.
42.	HOST	BLACK EM GANG TOGETHER TO KEEP WHITE EM OUT OF FACILITIES.
43.	EROSN	OFFICERS IN THE COMPANY HANDLE COMPLAINTS UNFAIRLY.
44.	HOST	THERE ARE RACIALLY OFFENSIVE SYMBOLS DISPLAYED ON POST.

(continued)

Table 29 (continued)

Simulation Events and Item Cluster Attachments

Item #	Item Cluster	Event
45.	RACSOL	AFTER DUTY, SOLDIERS STICK TOGETHER IN GROUPS OF THEIR OWN RACE.
46.	EROSN	OFFICERS IN THE COMPANY HANDLE PROMOTIONS UNFAIRLY.
47.	HOST	THERE ARE RACIAL INCIDENTS BETWEEN SOLDIERS IN THE COMPANY.
48.	HOST	THERE ARE RACIALLY DEFENSIVE SYMBOLS DISPLAYED IN THE COMPANY.
49.	HOST	BLACK SOLDIERS MAKE FUN OF WHITES' HAIR STYLE, MUSIC OR FOOD PREF.
50.	RACSOL	BLACK AND WHITE SOLDIERS DO NOT STICK TOGETHER WHEN OFF POST.
51.		BLACK SOLDIERS LET OTHER BLACKS CUT IN ON MESS LINES.
52.	EROSN	OFFICERS IN THE COMPANY MAKE UNFAIR DUTY ASSIGNMENTS.
53.		BLACK SOLDIERS ON THIS POST PREFER TO SIT TOGETHER IN THE MESS HALL.
54.	HOST	THERE HAVE BEEN PHYSICAL ASSAULTS BY BLACK SOLDIERS IN THE COMPANY.

the strategy falls. In some cases, a strategy will appear under more than one paragraph. For example, the strategy "Hold Rap sessions" occurs in each of the four sections. In a case like this, the strategy is not listed more than once. If the simulation user chooses "Hold Rap sessions," its effect is calculated separately for each of the four item clusters, using the appropriate rating from the questionnaire for each. Consequently, if "Hold Rap sessions" had a good effect toward HOST and RACSOL events, no effect on COMM events, and a bad effect on EROSN events, the difference would be preserved and applied to the appropriate events automatically, even though the four separate listings of "Hold Rap sessions" do not exist in the simulation output. Because of this process, the original 44 factor-related strategies are folded into a list of 28 "Command Actions" as shown in Table 30.

There are two reasons for this folding process: (1) When a commander takes an action, he may not realize that, while it is beneficial to the particular element of the racial climate he is immediately concerned with, it may adversely affect other elements in ways of which he is not aware. With the folding arrangement the simulation can illustrate these relationships. (2) The folding also produces a more compact and usable output.

Racial Climate Indices (RCIs). The RCIs indicate the racial climate underlying the random process that generates the occurrence of events. They are calculated individually for each of the four major item clusters and can indicate specific areas of change. The RCIs reflect the average probability for all events which are attached to one of the four clusters; a separate number is displayed for each one. To calculate an RCI, the event probabilities of all the items attached to an item cluster are summed, and divided by the number of events in the cluster, yielding the mean probability. The mean probability is then subjected to a range adjustment by subtracting .5 and multiplying -2. This changes the range from 0.0 to 1.0 (the probability range) to -1.0 to +1.0, which was felt to be more meaningful. The formula is:

$$RCI_c = \left(\frac{\sum p_c}{n_c} - .5 \right) \times -2$$

where: RCI_c is the racial climate index for cluster c

$\sum p$ is for the sum of the event probabilities for cluster c

n_c is the number of events attached to the cluster

Thus, if the average probability for an item cluster were low (below .5), indicating good racial climate, the RCI for that factor would be positive. The further the average probability fell below .5, the closer the RCI would approach +1. On the other hand, if the average probability for an item cluster were high (above .5), indicating bad racial climate, the RCI would be negative, approaching -1 as the average approached 1.0.

Table 30

List of Command Actions and Item Cluster^a Attachments

Item #	Item Cluster	Event
1.	H,C	CALL UPON THE RACE RELATIONS OFFICE FOR ASSISTANCE.
2.	H,E	CALL UPON THE IG OFFICE FOR ASSISTANCE.
3.	H,E,C,R	HOLD RAP SESSIONS.
4.	H,E,C	SEEK OUT AND TALK INDIVIDUALLY WITH PERSONNEL WITH PROBLEMS.
5.	H,E,C,R	USE CHAIN OF COMMAND (PLATOON LEADERS, NCOS) TO HANDLE THE SITUATION.
6.	H	REQUEST BAT. COM. TO BRING CHARGES AGAINST MEN IN RACIAL INCIDENTS.
7.	H	TAKE DISCIPLINARY ACTION AGAINST EM WHO COMPLAIN OF RACIAL PROBLEMS.
8.	H,E	CALL IN THE MPS.
9.	H	VIGOROUSLY PROSECUTE ANY ASSULTS.
10.	H,R	BREAK UP RACIAL GROUPINGS.
11.	H,E,C	TALK WITH RECOG. EM OR MINOR. GROUP LEADERS ON HOW TO CORRECT SITUATION.
12.	H,R	SEGREGATE RECOGNIZED LEADERS OF MINORITY GROUPS FROM OTHER PERSON.
13.	H	RESTRICT ALL PERSONNEL TO BARRACKS.
14.	H	INVESTIGATE ALL RUMORS OF RACIAL DISCRIMINATION.
15.	H,E	USE BULLETIN BOARDS TO PUBLICIZE DISCIPLINARY ACTIONS.
16.	E	TAKE ACTION TO ELIMINATE ANY UNFAIR POLICIES OR PRACTICES.
17.	E	TAKE DISCIPLINARY ACTION AGAINST MEN WHO COMPLAIN ABOUT COM. AUTHO.
18.	E	SEGREGATE INDIVIDUALS COMPLAINING ABOUT COMMAND AUTHORITY
19.	E	INVESTIGATE ALL COMPLAINTS OF UNFAIR TREATMENT.
20.	C	ARRANGE FOR MORE ENTERTAINMENT AND RECREATIONAL OPPORTUNITIES.
21.	C	TAKE DISCIPLINARY ACTION AGAINST MEN IN TROUBLE WITH COMMUNITY.
22.	C	INFORM BAT. COMM. THAT ARMY SHOULD DO SOMETHING ABOUT SITUATION.

(Continued)

Table 30 (continued)

List of Command Actions and Item Cluster^a Attachments

Item #	Item Cluster	Event
23.	C	RESTRICT ALL PERSONNEL TO THE POST.
24.	C	REQUEST THAT CERTAIN TROUBLE SPOTS OFF POST BE DECLARED OFF LIMITS.
25.	R	TAKE DIS. ACTION AGAINST MEN STICKING TOGE. WITH OTHER OF SAME RACE.
26.	R	REPORT ANY RACIAL GROUPINGS TO THE RACE RELATIONS OFFICE.
27.	R	ASSIGN PERSONNEL FROM DIFFERENT ETHNIC GROUPS TO PULL DUTY TOGETHER.
28.	R	MAKE RACIALLY MIXED BARRACKS ASSIGNMENTS.

^aH=HOST, E=EROSN, C=COMMD, R=RACSOL.

Relationships Assumed in the Simulation

There are two basic relationships assumed in the simulation. Stated simply, they are:

1. The occurrence or nonoccurrence of an event affects the probability of other events occurring.
2. The application of a strategy affects the probability that factor-related events will occur.

These relationships were developed on a heuristic basis after an examination of how the elements represented on the questionnaire might interact in a real situation. Their application in the simulation will be discussed below.

Occurrence and Event Probabilities. The previous discussion on how the decision is made about whether an event occurs describes only a small part of the actual process by which the event list displayed to the user is generated.

In a real situation, when an event occurs it will affect the future course of events. One extreme example of this is the concept of the precipitating event discussed in Phase I. This is where an event which in itself is of small significance causes a racial incident because of a high level of underlying tension. Through the same process, the occurrence of a highly significant event may spark a racial incident even though the level of tension is not high.

To simulate this process, the Pearson correlation matrix among PRCI items from which the events were derived (calculated on the entire five-post sample of enlisted men) is used to adjust the probabilities of other events once an event has occurred or failed to occur. This process is built into the procedure for generating the event list. That procedure is as follows:

1. Find the event with the highest probability of occurrence which has not yet been examined in the present round.
2. Decide whether that event occurs or not by applying the random number described above.
3. If the event occurs:
 - a. All other events which are positively correlated with the occurring event have their own probabilities of occurrence increased by an amount proportional to the magnitude of the correlation between them. If the correlation is +1.00, the new event probability will be 1.00 because a correlation of 1.00 indicates that two things always occur together. If the correlation is 0.0 (indicating no relationship), the probability remains unchanged. Intermediate values for the correlation produce increases between the two extremes. The formula used to accomplish this is: If event A occurs and

the correlation between event A and event B is positive or zero:

$$p'_B = p_B + r_{AB}^2 \times (1 - p_B)$$

where: p'_B is the new adjusted probability for event B

p_B is the old probability for event B

r_{AB}^2 is the squared correlation coefficient (the square is used to moderate the effect)

- b. All other events which are negatively correlated with the occurring event have their own probabilities of occurrence decreased by an amount proportional to the absolute magnitude of the correlation. Thus if the correlation were -1.00 (indicating that the two events never occur together), the probability would become 0.0. The formula is:

If event A occurs and the correlation between event A and event B is negative:

$$p'_B = p_B - r_{AB}^2 \times p_B$$

If the event does not occur:

- a. All other events which are positively correlated to the nonoccurring event have their probabilities decreased. (A positive correlation indicates events tend to occur together and if one does not occur, the other will be less likely to occur.) The formula in (b) above is applied:

$$p'_B = p_B - r_{AB}^2 \times p_B$$

- b. All other events which are negatively correlated to the nonoccurring event have their probabilities increased using the formula from section (a) above:

$$p'_B = p_B + r_{AB}^2 \times (1 - p_B)$$

- c. As above, a correlation of zero produces no change.

4. If there are any events left which have not had their occurrence or nonoccurrence decided in the present round go to step 1.

The process above will occur 54 times each round of the simulation. Each event will have its probability adjusted 53 times, once for each occurrence or nonoccurrence of each event other than itself. One can see that if the first few events which occur are highly correlated with a large number of other

events, their occurrence will make the generation of a long list of events, symbolizing a major racial incident, more likely. However, if the same events were not to occur, a shorter list becomes more likely. This is meant to correspond to the example of the precipitating event mentioned at the beginning of this discussion.

Strategies and Event Probabilities. When a commander applies a strategy to a racially tense situation, he does it with the hope of reducing the further occurrence of racial incidents. Translated in terms of the model, this means that when a strategy is applied, it should reduce the probability of events occurring. However, a commander's perception of the effectiveness of a strategy may be vastly different from that of his men. Therefore, in the simulation the actual effect of a strategy on event probabilities is determined by the average rating given each strategy by the enlisted men who took the Soldiers' Perceptions Survey.

Each strategy item on that survey was scaled from 1 to 5 so that a rating of 1 indicated a very good effect, a rating of 3 indicated no effect, and a rating of 5 indicated a very bad effect. To calculate the effect of a strategy on event probability, the average scale score was subjected to a range adjustment:

$$\underline{m}' = \frac{m - 3}{2}$$

where: m is the average rating for a strategy item in the particular sample that is being used.

This yields a number with a range of +1.0 to -1.0. In this form it is used to weight the correlation between the item average factor score for the factor to which the strategy is attached and each of the events which are attached to the item cluster representing that factor.

The weighting is accomplished by simply multiplying the adjusted mean by the correlation. At this point the weighted item average correlation is used to modify the event probability by using it in the same basic formulas used to change event probabilities after the occurrence of an event. The formula for the change in the probability of event A after the application of a strategy is:

If \underline{r}_w , the weighted correlation, is positive or zero,

$$\underline{p}'_A = \underline{p}_A + \underline{r}_w \times (1 - \underline{p}_A)$$

If \underline{r}_w is negative,

$$\underline{p}'_A = \underline{p}_A - \underline{r}_w \times \underline{p}_A$$

where: \underline{p}_A is the old probability

\underline{p}'_A is the new probability

$$\underline{r}_w = \underline{r}_{AF}^2 \times \frac{m - 3}{2}$$

where: r_{AF} is the correlation between event A (actually the FRCI item from which event A was derived) and the item average score for the factor to which the strategy was attached (like an item-total correlation).

When a strategy is selected, the above formula is applied to the probability of each event which is attached to the same item cluster as the strategy. The appropriate r_{AF} , which is different for each event, is substituted. The result of the weighting process is that if the average response is 5, representing a very bad effect, the range adjusted number +1 is multiplied by the correlation, which then increases the event probability with its full force. If the average response was 4, a moderately bad effect, the range adjusted number would be .5 and would reduce the weighted correlation by $\frac{1}{2}$, increasing the probability by a lesser amount. If on the other hand, the average rating was 1 or 2, a good effect, the range adjusted number would be negative, causing the weighted correlation to become negative, which would reduce the event probability. A rating of 3 would produce an adjusted number of 0, a weighted correlation of 0.00, and no change in the event probability.

Results

Several examples of simulation output which illustrate a few of its basic properties are shown below. The excerpts from the simulation appear exactly as they did in the original output except that responses typed by the user have been underlined. This section represents only a small sample of the simulation runs actually conducted and is meant to serve solely as an illustration. The conclusions reached from the remainder of simulation runs are discussed in the discussion section which follows.

The simulation itself begins with the introductory sequence shown below:

```
/BEGIN
YOU ARE ON-LINE WITH THE ARMY CROSS-IMPACT (X-I)
ANALYSIS MODEL.
DO YOU WISH A BRIEF DESCRIPTION OF THE MODEL? (YES/NO)
/YES
THE ARMY CROSS-IMPACT MODEL ATTEMPTS TO SIMULATE THE
IMPACTS OF COMMAND STRATEGIES ON RACIAL CLIMATE AS
DEFINED BY VARIOUS SITUATIONS.
S I T U A T I O N S ARE DEFINED AS SEQUENCES OF
E V E N T OCCURRENCES. C O M M A N D S T R A T E G I E S
ARE DEFINED AS SEQUENCES OF C O A C T I O N S. THE
R A C I A L C L I M A T E IS DEFINED IN TERMS OF
FOUR INDICES.
  -COMMAND AUTHORITY
  -RACIAL SOLIDARITY
  -HOSTILITY
  -COMMUNITY RELATIONS
THESE INDICES TAKE VALUES ON A SCALE FROM -1("BAD") to
+1("GOOD").
THE INPUT DATA FOR THE MODEL ARE STATISTICAL IN NATURE
```

AND WERE OBTAINED FROM THE SOLDIERS' PERCEPTIONS SURVEY CONDUCTED RECENTLY FOR THE ARMY RESEARCH INSTITUTE.

A post is selected and RCIs are displayed.

FIVE POSTS ARE INCLUDED IN THE MODEL

- 1--POST A
- 2--POST B
- 3--POST C
- 4--POST D
- 5--POST E
- 6--ALL POSTS
- 7 33% "BAD" COMPANIES
- 8 33% "GOOD" COMPANIES
- 9 10% "BAD" COMPANIES
- 10 10% "GOOD" COMPANIES
- 11 "WORST" COMPANY
- 12 "BEST" COMPANY

WHICH DATA SAMPLE DO YOU WISH TO CONSIDER FOR THE SIMULATION?

PLEASE ENTER THE NUMBER OF THE SAMPLE

THE RACIAL CLIMATE INDICES FOR THE SELECTED POST ARE GIVEN BELOW

RACIAL CLIMATE INDICES

COMMAND AUTHORITY	-0.61
RACIAL SOLIDARITY	0.24
HOSTILITY	0.01
COMMUNITY RELATIONS	-0.57

The initial situation is generated and new RCIs are displayed:

***STEP 1. SELECT INITIAL SITUATION

- 1--SELECT A SITUATION FROM THE LIST OF POSSIBLE EVENTS, OR
- 2--LET A RANDOM SITUATION BE SELECTED ON THE BASIS OF
EVENT PROBABILITIES OF OCCURRENCE FOR THIS POST.

PLEASE ENTER 1 OR 2

/2

ENTER ANY NUMBER (TO INITIATE THE RANDOM SELECTION)

/0

SELECTED SITUATION-OCCURRING ITEMS

- 1. NOT ENOUGH BARS, RESTAURANTS, AND NIGHTCLUBS OPEN TO SOLDIERS.
- 3. SOLDIERS ARE NOT ABLE TO GO OFF POST OFTEN ENOUGH.
- 4. SELDOM SEE BLACK AND WHITE SOLDIERS GOING PLACES TOGETHER ON POST.
- 5. BLACK SOLDIERS HAVE LITTLE IN COMMON WITH WHITE SOLDIERS.
- 6. THERE ARE QUITE A FEW FIGHTS ABOUT RACIAL MATTERS ON POST.

7. NCOS AND OFFICERS ON POST DISCRIMINATE AGAINST EM.
8. THERE IS RACIAL DISCRIMINATION AGAINST BLACKS ON POST.
9. OFFICERS ARE NOT VERY RESPONSIVE TO EM GRIEVANCES.
11. FEW BLACK SOLDIERS HAVE BOTH BLACK AND WHITE BUDDIES.
12. WHITE SOLDIERS TEND TO BE VERY SUSPICIOUS OF ANY GROUP OF BLACKS.
13. COMPLAINTS ABOUT DISCRIMINATION ARE TREATED UNFAIRLY.
14. IT IS NOT SAFE FOR A SOLDIER TO GO OFF POST ALONE.
15. RACIAL TENSIONS STRONG. WIDESPREAD VIOLENCE COULD RESULT.
16. BLACK SOLDIERS CAN GET INTO A LOT OF TROUBLE WHEN OFF POST.
18. IT IS UNSAFE FOR A BLACK SOLDIER TO GO OFF POST ALONE.
19. THE LEAVE POLICY IS GENERALLY UNFAIR.
20. MORE RACIAL DISCRIMINATION ON POST THAN IN CIVILIAN LIFE.
22. BLACK AND WHITE SOLDIERS SELDOM HAVE CLOSE FRIENDSHIPS.
23. DUTY ASSIGNMENTS ARE OFTEN BASED ON RACE.
24. THE ARMY NEEDS TO PROVIDE MORE FOR SOLDIERS ON POST.
26. WHITE EM GANG TOGETHER TO KEEP BLACK EM OUT OF FACILITIES.
27. UNFAIR TREATMENT AT PX, COMMISSARY, AND OTHER FACILITIES BECAUSE OF RACE.
28. EM UNWELCOME AT OFF-POST BARS, RESTAURANTS AND NIGHTCLUBS.
29. BLACKS ON THIS POST STAY WITHIN THEIR OWN GROUP.
30. WHITE SOLDIERS LET OTHER WHITES CUT IN ON THE MESS LINE.
31. PUNISHMENT AND DISCIPLINE ARE HANDLED UNFAIRLY.
33. WHITE OFFICERS HAVE TROUBLE HANDLING BLACK SOLDIERS.
34. UNFAIR TREATMENT OF EM AT STORES, RESTAURANTS, OR NIGHTSPOTS.
35. THE DAP AND OTHER RACIAL OR ETHNIC GESTURES ARE USED ON POST.
37. BLACKS ARE UNWELCOME AT OFF-POST BARS, RESTAURANTS, AND NIGHTCLUBS.
38. BL CK AND WHITE SOLDIERS DO NOT HANG AROUND TOGETHER AFTER DUTY.
39. WHITE SOLDIERS MAKE FUN OF BLACKS' HAIR STYLE, MUSIC OR FOOD PREFERENCE.
40. SOLDIERS ON THIS POST ARE HASSLED BY THE MILITARY POLICE.
42. BLACK EM GANG TOGETHER TO KEEP WHITE EM OUT OF FACILITIES.
43. OFFICERS IN THE COMPANY HANDLE COMPLAINTS UNFAIRLY.
45. AFTER DUTY, SOLDIERS STICK TOGETHER IN GROUPS OF THEIR OWN RACE.
46. OFFICERS IN THE COMPANY HANDLE PROMOTIONS UNFAIRLY.
52. OFFICERS IN THE COMPANY MAKE UNFAIR DUTY ASSIGNMENTS.
53. BLACK SOLDIERS ON THIS POST PREFER TO SIT TOGETHER IN THE MESS HALL.
54. THERE HAVE BEEN PHYSICAL ASSAULTS BY BLACK SOLDIERS IN THE COMPANY.

RACIAL CLIMATE INDICES

COMMAND AUTHORITY	-0.53
RACIAL SOLIDARITY	-0.20
HOSTILITY	-0.06
COMMUNITY RELATIONS	-0.52

Notice that 40 events have occurred and that their occurrence has changed the RCIs.

Now a series of strategies which should improve racial climate are applied:

***STEP 2. SELECT A COMMAND STRATEGY FOR THE ABOVE SITUATION (FROM THE CO ACTION LIST)

DO YOU WISH TO SEE THE CO ACTION LIST? (YES/NO)

/NO

ENTER NUMBER OF ACTIONS IN THE STRATEGY.

/11

ENTER THE CO ACTIONS IN THE ORDER YOU WISH TO APPLY THEM.

ENTER NUMBER OF THE FIRST CO ACTION IN THE STRATEGY.

/11

ENTER NUMBER OF THE NEXT CO ACTION

/20

ENTER NUMBER OF THE NEXT CO ACTION

/1

ENTER NUMBER OF THE NEXT CO ACTION

/19

ENTER NUMBER OF THE NEXT CO ACTION

/16

ENTER NUMBER OF THE NEXT CO ACTION

/15

ENTER NUMBER OF THE NEXT CO ACTION

/14

ENTER NUMBER OF THE NEXT CO ACTION

/2

ENTER NUMBER OF THE NEXT CO ACTION

/3

ENTER NUMBER OF THE NEXT CO ACTION

/4

ENTER NUMBER OF THE NEXT CO ACTION

/22

SELECTED COMMAND STRATEGY

	RANK
1. CALL UPON THE RACE RELATIONS OFFICE FOR ASSISTANCE.	3
2. CALL UPON THE IG OFFICE FOR ASSISTANCE.	8
3. HOLD RAP SESSIONS.	9
4. SEEK OUT AND TALK INDIVIDUALLY WITH PERSONNEL WITH PROBLEMS.	10
11. TALK WITH RECOG. EM OR MINOR. GROUP LEADERS ON HOW TO CORRECT SIT.	1

	RANK
15. USE BULLETIN BOARDS TO PUBLICIZE DISCIPLINARY ACTIONS.	6
16. TAKE ACTION TO ELIMINATE ANY UNFAIR POLICIES OR PRACTICES.	5
19. INVESTIGATE ALL COMPLAINTS OF UNFAIR TREATMENT.	4
20. ARRANGE FOR MORE ENTERTAINMENT AND RECREATIONAL OPPORTUNITIES.	2
22. INFORM BAT. COMM. THAT ARMY SHOULD DO SOMETHING ABOUT SITUATION.	11

After application of the strategies new RCIs are displayed.

RACIAL CLIMATE INDICES

COMMAND AUTHORITY	0.27
RACIAL SOLIDARITY	-0.28
HOSTILITY	-0.14
COMMUNITY RELATIONS	0.33

***STEP 3. RANDOMLY SELECTED SITUATION, AFTER LAST COMMAND STRATEGY.

(New event list was displayed at this point which contained 32 items; it is omitted for compactness.)

Observe how the Command Authority and Community Relations indices improve greatly while the Racial Solidarity and Hostility indices have worsened slightly. This seems to indicate that racial climate in general has improved. This observation is confirmed by the event list, which now contains only 32 events.

We now return to the original situation and apply a set of strategies which should make the climate worse.

YOU NOW HAVE FIVE OPTIONS

1. CONTINUE WITH EVENT OCCURRENCE IN THE CURRENT SITUATION.
2. APPLY AN ALTERNATIVE STRATEGY TO THE SITUATION SELECTED INITIALLY.
3. APPLY A NEW STRATEGY TO THE SITUATION AFTER LAST STRATEGY.
4. CHOOSE ANOTHER SAMPLE.
5. TERMINATE THE SIMULATION.

PLEASE ENTER 1, 2, 3, 4, OR 5

/1

***STEP 2. SELECT A COMMAND STRATEGY FOR THE INITIAL SITUATION

DO YOU WISH TO SEE THE CO ACTION LIST? (YES/NO)

/NO

ENTER NUMBER OF ACTIONS IN THE STRATEGY

/9

ENTER THE CO ACTIONS IN THE ORDER YOU WISH TO APPLY THEM.

ENTER NUMBER OF THE FIRST CO ACTION IN THE STRATEGY.

/23

ENTER NUMBER OF THE NEXT CO ACTION
/21
 ENTER NUMBER OF THE NEXT CO ACTION
/7
 ENTER NUMBER OF THE NEXT CO ACTION
/12
 ENTER NUMBER OF THE NEXT CO ACTION
/8
 ENTER NUMBER OF THE NEXT CO ACTION
/10
 ENTER NUMBER OF THE NEXT CO ACTION
/6
 ENTER NUMBER OF THE NEXT CO ACTION
/13
 ENTER NUMBER OF THE NEXT CO ACTION
/18

SELECTED COMMAND STRATEGY

- | | |
|---|---|
| 6. REQUEST BAT. COM. TO BRING CHARGES AGAINST
MEN IN RACIAL INCIDENT. | 7 |
| 7. TAKE DISCIPLINARY ACTION AGAINST EM WHO COMPLAIN
OF RACIAL PROBLEM. | 3 |
| 8. CALL IN THE MPS. | 5 |
| 10. BREAK UP RACIAL GROUPINGS. | 6 |
| 12. SEGREGATE RECOGNIZED LEADERS OF MINORITY
GROUPS FROM OTHER PERSON. | 4 |
| 13. RESTRICT ALL PERSONNEL TO BARRACKS. | 8 |
| 18. SEGREGATE INDIVIDUALS COMPLAINING ABOUT COMMAND
AUTHORITY. | 9 |
| 21. TAKE DISCIPLINARY ACTION AGAINST MEN IN TROUBLE
WITH COMMUNITY. | 2 |
| 23. RESTRICT ALL PERSONNEL TO THE POST. | 1 |

RACIAL CLIMATE INDICES

COMMAND AUTHORITY	-0.64
RACIAL SOLIDARITY	-0.26
HOSTILITY	-0.51
COMMUNITY RELATIONS	-0.62

***STEP 3. RANDOMLY SELECTED SITUATION, AFTER LAST COMMAND
STRATEGY.

(A 51-item event list which is displayed at this point
has been omitted.)

One can see that all the RCIs have worsened considerably. Also, the
event list has grown to 51 items.

We now end the simulation for this post and move on to another. Note
the obvious difference in racial climate between the first and second posts
as indicated by the initial RCIs.

RACIAL CLIMATE INDICES

COMMAND AUTHORITY	-0.79
RACIAL SOLIDARITY	-0.74
HOSTILITY	-0.73
COMMUNITY RELATIONS	-0.70

Discussion

As presently programmed, the simulation exhibits the qualities for which it was designed, and in many ways its behavior is similar to what one might expect in a real situation. However, there are several areas in which further work is needed.

One thing that is immediately obvious is that the various elements of the simulation are not balanced, i.e., their effects on each other are not in proper proportions. For example, the application of a strategy does not seem to have a great enough effect on event probabilities. Another imbalance has to do with event occurrence. When using the simulation, it seems that the occurrence of an event has too great an effect on event probabilities. Because the occurrence of an event has too great a negative effect on racial climate, it causes an over-occurrence of events, which in turn causes the racial climate to drift in a negative direction. This drift occurs even when climate is very good and accelerates as the climate worsens and even more events occur. To compensate for this problem, the event-occurrence impact needs to be lessened in some way. This may also help improve the strategy imbalance.

One problem inherent in the simulation project was the use of a data base which was, in some areas, inadequate to support the research design and which resulted in a number of design compromises, for instance, the lack of a specific time frame. Because of these compromises, the use of the simulation should be restricted to applications where its illustrative value is most important. It should be excellent for use as a training aid because it clearly illustrates the effect that various command actions can have on a changing racial climate. However, at present, its predictive value is probably limited.

There could be minor problems with implementation. Some minor aspects of the simulation as currently written are hardware dependent, though it is written in FORTRAN IV. Hardware dependencies include (1) clear CRT screen codes, (2) link to data file, (3) foreground/background commands on the CRT, (4) random access read, and (5) the random number generating algorithm. The adoption of the program to specific hardware should not be a major problem.

CONCLUSIONS AND IMPLICATIONS

Although this report has at various stages presented the principal conclusions of this research project, an overall conclusion can be drawn with regard to the development of the racial crisis model. The basic conceptualization of the model has been demonstrated to be consistent both with the perceptions of Army personnel regarding the events which characterize racial

climate at an Army installation and with regard to information relating to racial tension kept within individual company records. Given the extent to which the theoretical constructs defining the model have been repeatedly supported by these empirical findings, it would appear that the validity of the model has been demonstrated.

The major implications from the findings of this research regard potential applications of the racial crisis model which could be of practical significance to the Army. One practical application of the model appears to be its possible use as a training tool for Army leadership. The need for leadership training with respect to what events are perceived by enlisted men as indicating racial tension and what command strategies enlisted men feel are likely to be most effective in alleviating racial tension is emphasized by the finding that officers and enlisted men may differ in their perceptions of racial climate in the Army. It would appear useful for Army commanders to use the racial crisis model to learn what events enlisted men perceive as connoting negative racial climate so that appropriate corrective action might be taken if racial tension occurs. At present, the predictability of the racial crisis model is best demonstrated through the use of the computer simulation program developed during the project. Further development of this computerized version of the crisis model might provide a practical demonstration tool for use in training Army personnel.

APPENDIX A

SUBJECTS ELIMINATED BY POST AND
REASON FOR ELIMINATION

APPENDIX A

SUBJECTS ELIMINATED BY POST AND REASON FOR ELIMINATION

Post	Reason for Elimination					Company Not Given Inventories	Total
	Race	Rank	Sex	Incomplete Response	Response Irregularities	Over- Sampling	
A	13	3	0	2	6	10	61
B	18	4	0	0	0	8	30
C	12	10	3	10	7	21	174
D	10	10	0	6	3	5	35
E	22	9	0	12	16	0	174
-	-	-	-	-	-	-	-
Total	75	36	3	30	32	44	474

APPENDIX B

LISTING OF COMPUTER PROGRAM SIMULATION
AND PROGRAM DATA

```

1 C RECONSTRUCTED AND EXTENDED "RACIAL CRISIS SIMULATION"
2 C AT THE ARI-POM LABORATORY--D. J. GUEHRING, JAN 1980
3 C ORIGINAL PROGRAM DEVELOPED UNDER SUBCONTRACT BY BATTELLE,
4 C INFORMATION SYSTEMS SECTION IN "NUCLEUS" LANGUAGE. THIS
5 C VERSION IS WRITTEN IN FORTRAN IV.
6 C
7 C DIMENSION ST(28,4), IEVLST(19,54), ISTLST(19,30),
8 C 1 ISAM(12), ISMADR(12), ITEMS(13,4),
9 C 2 EVSAVE(2,54), BUF(18), RONG(10), EVSAV2(54),
10 C 3 INBUF(5), IEVMAX(54), IDUM(54), WT(54,4)
11 C DIMENSION BUF2(20)
12 C COMMON /IA/ EVWK(55), EVCORR(1485), RACCLM(2,4)
13 C COMMON /IEV/ IEVORD(54)
14 C LOGICAL FIRST
15 C ST IS EFFECTIVENESS OF STRATEGIES PARAMETERS
16 C IEVLST IS EVENT LISTING, ISTLST IS CO STRATEGY OPTIONS
17 C SAMPLE IS LETTER CODES FOR SAMPLES
18 C ISMADR IS DATA ADDRESS FOR START OF SAMPLE PARAMETERS
19 C EVCORR IS CORRELATION MATRIX (SYMMETRIC, VECTORIZED) BET EVENTS
20 C ITEMS IS EVENTS IN CLUSTERS, RACCLM IS RACIAL CLIMATE INDICES
21 C EVWK IS PROBS WHICH ARE MODIFIED DURING ROUND
22 C EVSAVE (1,*) IS RAW DATA, EVSAVE(2,*) IS PROBS ACCORDING TO MODEL
23 C IEVORD IS EVENT OR STRATEGY NUMBERS IN ORDER OF OCCURRENCE
24 C WT(K,1) IS CORRELATION BET RACIAL SCALE 1 AND EVENT K
25 C EVSAV2 IS EVENTS PROBS AFTER SELECTED SITUATION
26 C IEVMAX IS EVENT NUMBERS FROM LARGEST TO SMALLEST
27 C DATA WT/216*0.0/
28 C DATA ITEMS/7, 9, 13, 17, 19, 23, 31, 43, 46, 52, 2*55, 10,
29 C 1 2, 4, 5, 11, 22, 32, 38, 41, 45, 50, 2*55, 10,
30 C 2 26, 27, 33, 36, 39, 42, 44, 47, 48, 49, 54, 55, 11,
31 C 3 10, 12, 14, 16, 18, 7*55, 5/
32 C DATA IYES /'Y', 'ISAM /'L', 'A', 'B', 'C', 'D', 'E', 'F',
33 C 1 'G', 'H', 'I', 'J', 'K'/
34 C DATA ISMADR/85, 97, 109, 121, 133, 145, 157, 169, 181,
35 C 1 193, 205, 217/
36 C DATA WT(7,1)/ 59/, WT(9,1)/ 53/, WT(13,1)/ 61/, WT(17,1)/ 6/,
37 C 1 WT(19,1)/ 55/, WT(23,1)/ 61/, WT(31,1)/ 64/, WT(43,1)/ 72/,
38 C 2 WT(46,1)/ 66/, WT(52,1)/ 64/, WT(2,2)/ 57/, WT(4,2)/ 6/,
39 C 3 WT(5,2)/ 65/, WT(11,2)/ 68/, WT(22,2)/ 65/, WT(32,2)/ 57/,
40 C 4 WT(38,2)/ 67/, WT(41,2)/ 58/, WT(45,2)/ 57/, WT(50,2)/ 56/

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```

41 DATA WT(26,3)/.52/,WT(27,3)/.51/,WT(33,3)/.45/,WT(36,3)/.54/,
42 1 WT(37,3)/.54/,WT(42,3)/.6/,WT(44,3)/.57/,WT(47,3)/.62/,
43 2 WT(48,3)/.63/,WT(49,3)/.57/,WT(54,3)/.59/,WT(10,4)/.61/,
44 3 WT(12,4)/.5/,WT(14,4)/.67/,WT(16,4)/.63/,WT(18,4)/.56/
45 C FOLLOWING DATA STATEMENTS ARE FOR CRT SCREEN CONTROL AND
46 C ARE HARDWARE SPECIFIC (HAZELTINE 1500)
47 DATA IAD,ICES/Y7E110000/,X7E18/
48 DATA IAD10/Y7E110010/,IUC/X7E0C/,IAD15/Y7E110015/,
49 -INS/X7E1/
50 FIRST = .TRUE
51 WRITE(5,2)
52 FORMAT(30HIVE LINE DESIRED. E.G. L2 )
53 READ(5,4) XLD9
54 FORMAT(A4)
55 CALL OPENW (5,COUNT,4,0,0,1st)
56 CALL OPENW (9,XLD9,4,0,0,1st)
57 C
58 C OPENS LINE FOR PROGRAM DATA (READ ONLY)
59 CALL OPENW(8,RC.DTA,0,0,0,1st)
60 WRITE(5,1)
61 FORMAT( / IF OTHER THAN DEFAULTS TYPE "YES"/ )
62 IFRUB=0
63 IFEVT=0
64 IRUN=0
65 POWER=2.0
66 POWER2=2.0
67 C DEFAULT SEED FOR RANDOM NUMBER GENERATOR
68 IX=33333
69 C NUMBER OF TRIALS FOR RUNS
70 IRUNED=100
71 READ(5,3) ISELECT
72 FORMAT(A1)
73 IF(ISELECT.NE.IYES) GOTO 9
74 C OPTIONS GO HERE
75 WRITE (5,153)
76 FORMAT( / IF YOU WANT ALTERNATIVE "ABSOLUTE" METHOD OF EVENT ,/,
77 1 / PROBABILITY ASSIGNMENT TYPE "YES". DEFAULT IS PER ORIGINAL )
78 READ (5,3) INEWPR
79 WRITE (5,153)
80 FORMAT( / IF YOU WANT PROBABILITIES DISPLAYED TYPE "YES"/ )

```



```

81 READ(5,3) ISELECT
82 IF(ISELECT.EQ.IYES) IPRUN=1
83 WRITE(5,156)
84 FORMAT( / IF YOU WANT UNTESTED EVENT WITH MIN. PROB. TESTED /, /,
85 1 / TYPE "YES" (DEFAULT TEST EVENT WITH MAX. PROB) / )
86 READ(5,3) ISELECT
87 IF (ISELECT.EQ.IYES) IFEVT=1
88 WRITE(5,402)
89 FORMAT( / IF YOU WANT RUN-SIMULATION MODE TYPE "YES" / )
90 DO 424 I=1,10
91 RUNG(1)=0
92 READ(5,3) ISELECT
93 IF(ISELECT.EQ.IYES) IRUN=1
94 WRITE(5,450)
95 FORMAT( / IF ALT. 5 DIGIT 000 SEED TYPE "YES" / )
96 READ(5,3) ISELECT
97 IF(ISELECT.NE.IYES) GOTO 451
98 READ(5,452) IX
99 FORMAT(15)
100 CONTINUE
101 WRITE(5,601)
102 FORMAT( / IF YOU WANT MODIFY PARAMETERS TYPE "YES" /, /,
103 * / RECOMMEND DEFAULTS FOR INITIAL INTERACTIONS / )
104 READ (5,3) ISELECT
105 IF (ISELECT.NE. IYES) GO TO 9
106 WRITE(5,605)
107 FORMAT( / ENTER MODIFICATION PARAMETER OF EFFECTS OF STRATEGIES /, /,
108 * / ON EVENT PROBABILITIES IN F4.2 FORMAT, E.G. DEFAULT = 2.00 / )
109 READ(5,610) POWERZ
110 FORMAT(F4.2)
111 WRITE(5,615)
112 FORMAT( / ENTER MODIFICATION PARAMETER OF EVENT OCCURRENCES TO /, /,
113 * / EVENT PROBABILITIES IN F4.2 FORMAT. DEFAULT = 2.00 / )
114 READ(5,610) POWER
115 CONTINUE
116 C DEFAULT PARAMETERS GO HERE
117 WRITE(5,435)
118 FORMAT( / IF YOU WISH A BRIEF DESCRIPTION OF THE MODEL /, /,
119 1 / TYPE "YES" AND PRESS THE "RETURN" KEY. / )
120 READ(5,3) ISELECT

```

```

121 IF(1$ELECT.NE.IYES) GOTO 436
122 CALL CLEAR
123 WRITE(9,437)
124
125 437 FORMAT(// THE ARMY CROSS-IMPACT MODEL ATTEMPTS TO SIMULATE THE
126 1 // IMPACTS OF COMMAND STRATEGIES ON RACIAL CLIMATE AS //,
127 2 // DEFINED BY VARIOUS SITUATIONS. SITUATIONS ARE DEFINED //,
128 3 // AS SEQUENCES OF EVENT OCCURRENCES. COMMAND STRATEGIES ARE //,
129 4 // DEFINED AS SEQUENCES OF COMMANDER ACTIONS. THE RACIAL //,
130 5 // CLIMATE IS DEFINED IN TERMS OF FOUR INDICES. //, 5X,
131 6 // COMMAND AUTHORITY //, 5X, RACIAL SOLIDARITY //, 5X,
132 7 // HOSTILITY //, 5X, COMMUNITY RELATIONS //)
133 WRITE(9,438)
134
135 438 FORMAT(// THESE INDICES TAKE VALUES ON A SCALE FROM -1 ("BAD") //,
136 1 // TO +1 ("GOOD"). THE INPUT DATA FOR THE MODEL ARE //,
137 2 // STATISTICAL IN NATURE AND WERE OBTAINED FROM A SURVEY //,
138 3 // OF PERCEPTIONS OF OVER 1300 SOLDIERS //)
139 WRITE(9,115)
140 READ(9,3) 1$ELECT
141
142 436 CONTINUE
143 C ZERO ARRAY
144 DO 5 I=1,28
145 DO 5 J=1,4
146 5 1(I,J)=0
147 C RETURN TO HERE WHEN NEW SAMPLE DESIRED
148 137 CONTINUE
149 C GIVE SAMPLE OPTIONS AND GET DESIRED SAMPLE
150 CALL CLEAR
151 WRITE(9,8)
152
153 8 FORMAT(// DATA FROM THESE SAMPLES IS AVAILABLE: //,
154 1 5X, //L--ALL POSTS //, 5X, //A--POST A //, 5X,
155 2 //B--POST B //, 5X, //C--POST C //, 5X, //D--POST D //, 5X,
156 3 //E--POST E //, 5X, //F--"BAD" 33% OF COMPANIES //, 5X,
157 4 //G--"GOOD" 33% OF COMPANIES //, 5X, //H--"BAD" 10% OF COMPANIES //,
158 5 //, 5X, //I--"GOOD" 10% OF COMPANIES //, 5X, //J--"WURST" COMPANY,
159 6 //, 5X, //K--"BEST" COMPANY //, // TYPE THE LETTER OF YOUR CHOICE //,
160 7 // FOLLOWED BY THE "RETURN" //)
161 IF(.NOT. FIRST) GOTO 15
162 C READ EVENT AND STRATEGY LISTS INTO CORE FROM DATA FILE
163 READ (8,6) IEVLST, 1$1LST
164 FORMAT(19A4,4X)

```

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```

161 LJ=17
162 N=228
163 DO 300 J=1,54
164 DO 300 J=1,54
165 IF (J.LT.19) GO TO 310
166 READ(8,7),END=5000,REC=N) BUF
167 N=N+1
168 LJ=LJ+1
169 IF (LJ.GT.19) GO TO 300
170 IXX=1+(J4J-J)/2
171 EVORR(IXX)=BUF(IJ)
172 LJ=LJ+1
173 CONTINUE
174 300
175 7
176 15
177 IROUND=1
178 READ (7,4) ISELECT
179 DO 10 J=1,12
180 IF (ISELECT.NE.ISAM(1)) GO TO 10
181 C NN IS START OF RANDOM ACCESS READ
182 NN = ISAM(1)
183 GO TO 12
184 10 CONTINUE
185 WRITE(2,11)
186 11
187 15
188 12 CONTINUE
189 C READ VALUES FOR STRATEGY EFFECTIVENESS FOR SAMPLE
190 READ(8,60,END=5000,REC=NN) (ST(J,3),J=1,10)
191 60
192 60
193 12
194 12
195 12
196 12
197 12
198 12
199 12
200 12

```

```

201  FORMAT(2(F4.2,F3.2),17X)
202  C IF ALTERNATE PROBABILITY OF EVENTS SELECTED, PROBABILITIES
203  C ARE COMPUTED BASED UPON ALWAYS = 1.00, NEVER = 0.0 BASIS
204  C RATHER THAN METHOD DESCRIBED IN REPORT
205  IF(INEWR.NE.IYES) GOTO 138
206  DO 63 I=1,54
207  EVSAVE(2,I)=(EVSAVE(1,I)-1.00)*0.25
208  C ENTER HERE TO REPEAT ROUND WITH SAME SAMPLE
209  138  CONTINUE
210  DO 140 I=1,54
211  EVWK(I)=EVSAVE(2,I)
212  CALL CLEAR
213  CALL RCINDX (O,ITEMS,IPROB,IRUN)
214  C EVENTS FOR ROUND
215  IF(IRUN.EQ.1) GOTO 55
216  CALL CLEAR
217  WRITE(9,50)
218  FURNAT(1) INTERNAL EVENT SELECTION OR TYPE "YES" TO SELECT
219  READ(9,3) ISELECT
220  IF (ISELECT.NE.IYES) GOTO 55
221  J=1
222  C EVENTS SELECTED BY USER
223  WRITE(9,71)
224  FURNAT(1) ENTER EVENT NUMBERS IN OCCURRENCE ORDER,/,
225  1 / SEPARATE THEM BY BLANKS, USE ONE OR MORE LINES, END WITH "/"
226  CALL FREFLD
227  IEVNT=0
228  DO 56 I=1,54
229  IF(IEVORD(I).EQ.0) GOTO 68
230  CALL ADJUST(IEVORD(I),TRUE,POWER)
231  IEVNT=IEVNT+1
232  C EVENTS SELECTED INTERNALLY
233  55  CONTINUE
234  WRITE(9,57)
235  FURNAT(1) GENERATING EVENT OCCURRENCES
236  IEVNT=0
237  DO 93 I=1,54
238  IDUM(I)=0
239  DO 94 I=1,54
240  DO 86 J=1,54

```

241	IF (IDUM(J)) 86,89,86	
242	CONTINUE	
243	MAX=J	
244	DO 85 K=1,54	
245	IF(IDUM(K).EQ.1) GOTO 85	
246	C SELECT EVENT WITH MAX PROB	
247	IF(IFEVT.EQ.0.AND.EVWK(MAX).GE.EVWK(K)) GOTO 85	
248	C SELECT EVENT WITH MIN PROB	
249	IF(IFEVT.EQ.1.AND.EVWK(MAX).LE.EVWK(K)) GOTO 85	
250	IF(EVWK(MAX).GE.EVWK(K)) GOTO 85	
251	MAX=K	
252	CONTINUE	
253	C DUES EVENT OCCUR	
254	CALL RAN(RANDOM,IX)	
255	IF(EVWK(MAX)-RANDOM) 90,91,91	
256	CALL ADJUST(MAX,.FALSE.,POWER)	
257	GOTO 94	
258	CALL ADJUST(MAX,.TRUE.,POWER)	
259	IEVNT=IEVNT+1	
260	IEVGRU(IEVNT)=MAX	
261	IDUM(MAX)=1	
262	C WRITE NUMBER OF EVENTS	
263	CONTINUE	
264	IF(IRUN.EQ.1) GO TO 415	
265	WRITE (9,105) IEVNT	
266	FORMAT(13,' EVENTS HAVE OCCURRED',/)	
267	1 / TYPE "YES" TO SEE LIST IN ORDER OF OCCURRENCE /	
268	READ(9,3) ISELECT	
269	IF(ISELECT.NE.1YES) GOTO 110	
270	CALL CLEAR9	
271	J=0	
272	DO 111 I=1,54	
273	IF(IEVGRU(I).EQ.0) GOTO 111	
274	J=J+1	
275	KJ=IEVGRU(I)	
276	WRITE(9,112) (IEVLT(K,KJ),K=1,19)	
277	FORMAT(/19A4)	
278	IF(MOD(J,5).EQ.0) GO TO 211	
279	GOTO 111	
280	CONTINUE	

```

281 114 WRITE (9,115)
282 115 FORMAT(// PRESS "RETURN" TO CONTINUE)
283 READ(9,3) ISELECT
284 CALL CLEAR
285 111 CONTINUE
286 WRITE(9,115)
287 READ(9,3) ISELECT
288 110 CONTINUE
289 DO 147 I=1,54
290 EVSAVZ(I)=EVWK(I)
291 GOTO 415
292 DO 148 I=1,54
293 EVWK(I)=EVSAVZ(I)
294 415 CONTINUE
295 CALL RCINDX (1,ITEMS,IPROB,IRUN)
296 C TEST FOR RUN-SIM MODE AND ITS COMPLETION
297 IF (IRUN.NE.1) GOTO 421
298 IF (IRUNCT.EV. IRUNED) GOTO 410
299 IRUNCT=IRUNCT+1
300 DO 420 I=1,4
301 J=I+5
302 RONG(J)=RONG(J)+RACELM(2,I)*RACELM(2,I)
303 RONG(1)=RONG(1)+RACELM(2,1)
304 RONG(5)=RONG(5)+1EVENI
305 RONG(10)=RONG(10)+1EVENI*1EVENI
306 GO TO 138
307 CONTINUE
308 C LIST STRATEGIES
309 CALL CLEAR
310 WRITE(9,150)
311 150 FORMAT (// TO SEE LIST OF COMMAND STRATEGY OPTIONS TYPE "YES")
312 READ(9,3) ISELECT
313 IF (ISELECT.NE. IYES) GOTO 124
314 J=1
315 DO 127 JJ=1,3
316 CALL CLEAR
317 DO 123 I=1,5
318 WRITE(9,112) (ISTLST(K,J),K=1,19)
319 J=J+1
320 123 WRITE(9,115)

```

```

321 READ(7,3) ISELECT
322 CONTINUE
323 C ISELECT STRATEGIES
324 CONTINUE
325 CALL CLEAR9
326 WRITE(9,125)
327 JN=0
328 FORMAT( / ENTER SELECTED COMMAND STRATEGIES FOLLOWED BY RETURN,
329 - /, / END WITH / )
330 CALL FREEL1
331 IF(IEVORD(1).EQ.0) GOTO 139
332 IF(JN.EQ.0) WRITE(9,260) ICES
333 FORMAT( / HERE ARE THE COMMAND ACTIONS TAKEN: , A4 )
334 JN=JN+1
335 ADDRESS CURSER
336 WRITE(9,121) IADIS,INS,IUC
337 IF(IEVORD(1).LE.28) GO TO 122
338 WRITE(9,128)
339 FORMAT( / STRATEGY NUMBER OUT OF RANGE, TRY AGAIN )
340 GO TO 126
341 KJ=IEVORD(1)+2
342 WRITE(9,121) (ISLST(K,KJ),K=1,19)
343 FORMAT(19A4)
344 CONTINUE
345 C STRATEGIES MODIFY EVENT PROBABILITIES
346 DO 170 JJJ=1,54
347 JJ=IEVORD(JJJ)
348 C IF NO MORE STRATS, THEN SKIP
349 IF(JJ.EQ.0) GO TO 178
350 C DETERMINE ITEM CLUSTERS EFFECT BY STRATEGY JJ
351 DO 171 I=1,4
352 IF(ST(JJ,I).EQ.0.0) GOTO 171
353 C GO THROUGH ITEMS IN A CLUSTER ITEM 55 IS A DUMMY
354 DO 172 J=1,12
355 IF(ITEMS(J,I).EQ.55) GOTO 171
356 K=ITEMS(J,I)
357 C R IS THE EFFECT (+ FOR AMELIORATIVE, - FOR NOT) TIMES WEIGHTING
358 C OF ITEM ON THE FACTOR
359 RR=(ST(JJ,I)-3.0)/2.0.
360 R=RR*WT(K,I)**POWERZ

```

```

361 C IF NEG CHANGE IS PROB OF EVENT HAPPENING, OTHERWISE TO PROB
362 C NOT HAPPENING. NEG MEANS GOOD EFFECT
363 IF (R) 174,176,176
364 EVWK(K)=EVWK(K)+R*EVWK(K)
365 GOTO 172
366 EVWK(K)=EVWK(K)+R*(1-EVWK(K))
367 CONTINUE
368 CONTINUE
369 CONTINUE
370 CONTINUE
371 CALL RLINDX (1, ITEMS, IPRUB, IRUN)
372 ADDRESS CURSOR
373 WRITE(9,121) IAD13,IUC
374 CALL WAIT(2,2,1ST)
375 WRITE(9,121) ICFG, IAD13,IUC
376 GO TO 126
377 C
378 WRITE(9,11)
379 CALL CLEAR?
380 WRITE(9,130)
381 FORMAT('YOU NOW HAVE SEVERAL OPTIONS: ',//,
382 '1/ 1 CONTINUE WITH EVENT OCCURRENCES IN THE CURRENT SITUATION',//,
383 '2/ 2 APPLY AN ALTERNATE STRATEGY TO THE INITIALLY SELECTED SITU',
384 '3/ ACTION',//, '3 CHANGE THE INITIALLY SELECTED SITUATION',//,
385 '4/ 4 CHOOSE ANOTHER SAMPLE',//,
386 '5/ 5 CHANGE THE PROGRAM OPTIONS',//,
387 '5/ 6 TERMINATE THE SIMULATION',//,
388 '5/ TYPE THE NUMBER OF YOUR CHOICE AND PRESS "RETURN"')
389 READ(9,135) ISELECT
390 FORMAT(A1)
391 IF(ISELECT.EQ.'1') GOTO 54
392 IF(ISELECT.EQ.'2') GOTO 146
393 IF(ISELECT.EQ.'3') GOTO 138
394 IF(ISELECT.EQ.'4') GOTO 137
395 IF(ISELECT.EQ.'5') GOTO 620
396 IF(ISELECT.NE.'6') GOTO 136
397 GOTO 5001
398 CALL CLEAR?
399 GOTO 55
400 DO 423 I=1,5

```



```

401 423  RONG(I)=RONG(I)/IRUNED
402 425  J=6,10
403  C CALCULATES THE STANDARD DEVIATIONS OF INDICES IN RUN-SIM MODE
404  I=J-5
405  RONG(J)=SQRT((RONG(J)-IRUNED*RONG(I))*RONG(I))/(IRUNED-1))
406  WRITE(9,430) 1X,IRUNED,RONG
407  430  FORMAT(// SEED WAS',10X,16,/, AVERAGE CHANGE FOR FOUR',
408  1 / INDICES OVER',17,/, TRIALS',/,4(/19X,F6.2),/,
409  2 / AVERAGE NUMBER OF EVENTS WAS',19X,F6.3,
410  3 / STANDARD DEVIATIONS FOR INDICES',/,4(/19X,F6.3)
411  4 /,/, " " EVENIS',/19X,F6.3)
412  READ(9,3) ISELECT
413  GO TO 134
414  5001  WRITE(9,5002)
415  5002  FORMAT ('BYE NOW!!!')
416  5000  STOP
417  END
418  SUBROUTINE ADJUST(IEVENT,I0CCUR,POWER)
419  C WHEN IEVENT OCCURS OR NOT, PROB OTHER EVENTS ADJUSTED
420  COMMON /IA/ EVWK(55),EVCURR(1485),RACCLM(2,4)
421  LOGICAL I0CCUR
422  DO 10 I=1,54
423  IF(IEVENT-I) 11,10,13
424  11  IRX=IEVENT+(I*1-1)/2
425  GOTO 14
426  13  IRX=1+(IEVENT*IEVENT-1EVENI)/2
427  14  IF(I0CCUR) GOTO 5
428  C EVENT DOES NOT OCCUR
429  IF(EVCURR(IRX)) 15,16,16
430  15  EVWK(I)=EVWK(I)+(EVCURR(IRX)**POWER)*(1-EVWK(I))
431  GOTO 10
432  16  EVWK(I)=EVWK(I)-(EVCURR(IRX)**POWER)*EVWK(I)
433  GOTO 10
434  C EVENT DOES OCCUR
435  5  IF(EVCURR(IRX)) 20,21,21
436  20  EVWK(I)=EVWK(I)-EVCURR(IRX)**POWER*EVWK(I)
437  GOTO 10
438  21  EVWK(I)=EVWK(I)+EVCURR(IRX)**POWER*(1-EVWK(I))
439  10  CONTINUE
440  RETURN

```

```

441      END
442      SUBROUTINE RCINDX(IC, ITEMS, IPROB, IRUN)
443      C COMPUTES THE RACIAL CLIMATE INDICES
444      COMMON /IA/ EVWK(55), EVCURK(1485), RACCLM(2, 4)
445      DIMENSION ITEMS(13, 4)
446      DATA ICLEAR/X'7E12'/
447      FORMAT(A4)
448      CONTINUE
449      C RACCLM(1,*) IS CURRENT ROUND , RACCLM(2,*) IS PREVIOUS ROUND
450      C IF IPROB=1 PROBABILITIES WILL BE DISPLAYED BEFORE INDICES
451      IF (IPROB.NE.1) GO TO 101
452      CALL CLEAR
453      FORMAT(' HERE ARE THE PROBABILITIES FOR THE 54 EVENTS', 6(/9F6.2))
454      WRITE(9,100) (EVWK(I), I=1,54)
455      READ(9,102) ISELCT
456      DO 50 J=1,4
457      RACCLM(2,J)=RACCLM(1,J)
458      RACCLM(1,J)=0
459      DO 55 I=1,12
460      K=ITEMS(I,J)
461      RACCLM(1,J)=RACCLM(1,J)+EVWK(K)
462      X=ITEMS(13,J)
463      RACCLM(1,J)=(RACCLM(1,J)/X-.5)*(-2.0)
464      IF(IC) 70,70,71
465      RACCLM(2,J)=0.0
466      GO TO 50
467      RACCLM(2,J)=RACCLM(1,J)-RACCLM(2,J)
468      50 CONTINUE
469      FORMAT(A4)
470      IF (IRUN.EQ.1) RETURN
471      WRITE(9,102) ICLEAR
472      WRITE(9,60) RACCLM
473      FORMAT (10X, 'RACIAL CLIMATE INDICES',
474      1 T44, 'VALUE', 5X, 'CHANGE', //, ' COMMAND AUTHORITY', 26X, F5.2, 5X,
475      2 F5.2, /, ' RACIAL SOLIDARITY', 26X, F5.2, 5X, F5.2, /,
476      3 ' HOSTILITY', 34X, F5.2, 5X, F5.2, /, ' COMMUNITY RELATIONS', 24X,
477      4 F5.2, 5X, F5.2)
478      RETURN
479      END
480      SUBROUTINE RAN(YFL, IX)

```

481	IV=IX*65539	
482	IF (IV) 5,6,6	
483	IV=IV+2147483647+1	5
484	YFL=IV	6
485	YFL=YFL*.4656613E-9	
486	IX=IV	
487	RETURN	
488	END	
489	SUBROUTINE FREFLD	
490	COMMON /IEV/ IEVORD(54)	
491	DIMENSION IN(80),NUM(10)	
492	DATA ISTOP//',',IBLK//',',NUM//0',',1',',2',',3',',4',',5',	
493	1',',6',',7',',8',',9',',	
494	MAXNUM=54	
495	DO 1 I=1,54	111
496	IEVORD(I)=0	1
497	J=1	5
498	READ(9,13) IN	2
499	FORMAT (80A1)	13
500	DO 100 I=1,80	
501	IF (IN(I).EQ. IBLK) GO TO 100	
502	IF (IN(I).EQ. ISTOP) GO TO 200	
503	DO 10 II=1,10	
504	IF (IN(I).EQ.NUM(II)) GO TO 20	
505	CONTINUE	10
506	WRITE (9,11)	
507	FORMAT (' AN ERROR HAS BEEN MADE, PLEASE REINITIAIE DATA ENTRY')	11
508	GO TO 5	
509	IF (I.EQ.80) GO TO 2	20
510	IJ=I+1	
511	IF (IN(IJ).EQ. ISTOP OR IN(IJ).EQ. IBLK) GO TO 25	
512	IDECI=IDECI*10+IJ-1	
513	GO TO 100	
514	IF (J.GT.54) GO TO 10	25
515	IEVORD(J)=IDECI*10+IJ-1	
516	J=J+1	
517	IF (J.GT. MAXNUM) GO TO 200	
518	IDECI=0	
519	CONTINUE	100
520	GO TO 2	

521	200	LEVORD(J)=0
522		RETURN
523		ENTRY PREFLI
524		MAXNUM=1
525		GO TO 111
526		END
527		SUBROUTINE CLEAR
528		DATA I/X'7E1C'//, 1AD9/Y'7E110009'//, 1CES/Y'7E187E0C'//
529		WRITE(9,1) I
530	1	FORMAT(2A4)
531		RETURN
532		ENTRY CLEAR9
533	0	CLEAR9 SCREEN FORM 9TH LINE DOWN
534		WRITE(9,1) 1AD9, 1CES
535		RETURN
536		END

DATA SET NO. DIA FOLLOWS:

1 NOT ENOUGH BARS, RESTAURANTS, AND NIGHTCLUBS OPEN TO SOLDIERS.
2 BLACK AND WHITE SOLDIERS GET TOGETHER ONLY ON DUTY ASSIGNMENTS.
3 SOLDIERS ARE NOT ABLE TO GO OFF POST OFTEN ENOUGH.
4 SELDOM SEE BLACK AND WHITE SOLDIERS GOING PLACES TOGETHER ON POST.
5 BLACK SOLDIERS HAVE LITTLE IN COMMON WITH WHITE SOLDIERS.
6 THERE ARE QUITE A FEW FIGHTS ABOUT RACIAL MATTERS ON POST.
7 NCOs AND OFFICERS ON POST DISCRIMINATE AGAINST ENLISTED SOLDIERS.
8 THERE IS RACIAL DISCRIMINATION AGAINST BLACKS ON POST.
9 OFFICERS ARE NOT VERY RESPONSIVE TO ENLISTED SOLDIERS' GRIEVANCES.
10 ENLISTED SOLDIERS CAN GET INTO A LOT OF TROUBLE OFF POST.
11 FEW BLACK SOLDIERS HAVE BOTH BLACK AND WHITE BUDDIES.
12 WHITE SOLDIERS TEND TO BE VERY SUSPICIOUS OF ANY GROUP OF BLACKS.
13 COMPLAINTS ABOUT DISCRIMINATION ARE HANDLED UNFAIRLY.
14 IT IS NOT SAFE FOR A SOLDIER TO GO OFF POST ALONE.
15 RACIAL TENSIONS ARE STRONG; WIDESPREAD VIOLENCE COULD RESULT.
16 BLACK SOLDIERS CAN GET INTO A LOT OF TROUBLE WHEN OFF POST.
17 PROMOTIONS ARE BASED ON A SOLDIER'S RACE.
18 IT IS NOT SAFE FOR A BLACK SOLDIER TO GO OFF POST ALONE.
19 THE LEAVE POLICY IS GENERALLY UNFAIR.
20 MORE RACIAL DISCRIMINATION ON POST THAN IN CIVILIAN LIFE.
21 NOT ENOUGH BARS, RESTAURANTS, AND NIGHTCLUBS OPEN TO BLACKS.
22 BLACK AND WHITE SOLDIERS SELDOM HAVE CLOSE FRIENDSHIPS.
23 DUTY ASSIGNMENTS ARE OFTEN BASED ON RACE.
24 THE ARMY NEEDS TO PROVIDE MORE FOR SOLDIERS ON POST.
25 SOLDIERS ATTACK OTHER SOLDIERS VERBALLY.
26 WHITE SOLDIERS GANG TOGETHER TO KEEP BLACK SOLDIERS OUT OF FACILITIES.
27 UNFAIR TREATMENT BY RACE AT PX, COMMISSARY, AND OTHER FACILITIES.
28 ENLISTED SOLDIERS UNWELCOME AT OFF-POST BARS, RESTAURANTS, AND CLUBS.
29 BLACKS AT THIS POST STAY WITHIN THEIR OWN GROUP.
30 WHITE SOLDIERS LET OTHER WHITES CUT IN ON THE MESS LINE.
31 PUNISHMENT AND DISCIPLINE ARE HANDLED UNFAIRLY.
32 SOLDIERS GROUP TOGETHER IN THE BARRACKS BY RACE.
33 WHITE OFFICERS HAVE TROUBLE HANDLING BLACK SOLDIERS.
34 UNFAIR TREATMENT OF SOLDIERS AT STORES, RESTAURANTS, OR NIGHTSPOTS.
35 THE DAP AND OTHER RACIAL OR ETHNIC GESTURES ARE USED ON POST.
36 THERE HAVE BEEN PHYSICAL ASSAULTS BY WHITE SOLDIERS IN THE COMPANY.
37 BLACKS ARE UNWELCOME AT OFF-POST BARS, RESTAURANTS, AND NIGHTCLUBS.
38 BLACK AND WHITE SOLDIERS DO NOT HANG AROUND TOGETHER AFTER DUTY.
39 WHITE SOLDIERS MAKE FUN OF BLACKS' HAIR STYLE, MUSIC, OR FOOD PREFERENCES.
40 SOLDIERS ON THIS POST ARE HARASSED BY THE MILITARY POLICE.

41 BLACK AND WHITE SOLDIERS DO NOT RAP TOGETHER.
42 BLACK SOLDIERS GANG TOGETHER TO KEEP WHITE SOLDIERS OUT OF FACILITIES.
43 OFFICERS IN THE COMPANY HANDLE COMPLAINTS UNFAIRLY.

44 THERE ARE RACIALLY OFFENSIVE SYMBOLS DISPLAYED ON POST.
45 AFTER DUTY, SOLDIERS STICK TOGETHER IN GROUPS OF THEIR OWN RACE.
46 OFFICERS IN THE COMPANY HANDLE PROMOTIONS UNFAIRLY.

47 THERE ARE RACIAL INCIDENTS BETWEEN SOLDIERS IN THE COMPANY.

48 THERE ARE RACIALLY OFFENSIVE SYMBOLS DISPLAYED IN THE COMPANY.

49 BLACK SOLDIERS MAKE FUN OF WHITES' HAIR STYLE, MUSIC, OR FOOD PREF.

50 BLACK AND WHITE SOLDIERS DO NOT STICK TOGETHER WHEN OFF POST.

51 BLACK SOLDIERS LET OTHER BLACKS OUT IN THE MESS LINES.

52 OFFICERS IN THE COMPANY MAKE UNFAIR DUTY ASSIGNMENTS.

53 BLACK SOLDIERS ON THIS POST PREFER TO SIT TOGETHER IN THE MESS HALL.

54 THERE HAVE BEEN PHYSICAL ASSAULTS BY BLACK SOLDIERS IN THE COMPANY.

55 HERE IS A LIST OF THE COMMAND ACTIONS WHICH MAY BE TAKEN.

56
57 1 CALL UPON THE RACE RELATIONS OFFICE FOR ASSISTANCE

58 2 CALL UPON THE INSPECTOR GENERAL OFFICE FOR ASSISTANCE

59 3 HOLD RAP SESSIONS

60 4 SEEK OUT AND TALK INDIVIDUALLY WITH PERSONNEL WITH PROBLEMS

61 5 USE CHAIN OF COMMAND (PLATOON LEADERS, NCOs) TO HANDLE THE SITUATION

62 6 REQUEST BN CO TO BRING CHARGES AGAINST SOLDIERS IN RACIAL INCIDENTS

63 7 TAKE DISCIPLINARY ACTION AGAINST THOSE COMPLAINING OF RACIAL PROBLEMS

64 8 CALL IN THE MPS

65 9 VIGOROUSLY PROSECUTE ANY ASSAULTS

66 10 BREAK UP RACIAL GROUPINGS

67 11 TALK WITH REGG. EM OR MINORITY LEADERS ON HOW TO CORRECT SITUATION

68 12 SEGREGATE RECOGNIZED LEADERS OF MINORITY GROUPS FROM OTHER PERSONNEL

69 13 RESTRICT ALL PERSONNEL TO BARRACKS

70 14 INVESTIGATE ALL RUMORS OF RACIAL DISCRIMINATION

71 15 USE BULLETIN BOARDS TO PUBLICIZE DISCIPLINARY ACTIONS

72 16 TAKE ACTION TO ELIMINATE ANY UNFAIR POLICIES OR PRACTICES

73 17 TAKE DISCIPLINARY ACTION AGAINST THOSE COMPLAINING ABOUT CO AUTHORITY

74 18 SEGREGATE INDIVIDUALS COMPLAINING ABOUT COMMAND AUTHORITY

75 19 INVESTIGATE ALL COMPLAINTS OF UNFAIR TREATMENT

76 20 ARRANGE FOR MORE ENTERTAINMENT AND RECREATIONAL OPPORTUNITIES

77 21 TAKE DISCIPLINARY ACTION AGAINST SOLDIERS IN TROUBLE WITH COMMUNITY

78 22 INFORM BN CO THAT ARMY SHOULD DO SOMETHING ABOUT THE SITUATION

79 23 RESTRICT ALL PERSONNEL TO POST

80 24 REQUEST THAT CERTAIN TROUBLE SPOTS OFF POST BE DECLARED OFF LIMITS

201	204	02	279	00	248	04	232	02	199	00	374	11	271	04	297	09	182	11
202	168	19	228	09	328	04	259	12	242	01	246	00	236	00	261	41	189	01
203	202	00	237	00	246	22	354	74	185	00	196	02	219	00	214	91	310	09
204	224	00	216	00	183	00	228	02	284	00	306	11	242	00	373	14	217	02
205	DATA FOR SAMPLE UP01																	
206	262	288	312	375	338	325	362	288	350	288								
207	338	362	325	275	350	275	238	262	325	275								
208	400	375	338	275	212	312	275	225	400	238								
209	225	350	250	188	438	238	350	325	350	262								
210	262	312	388	338														
211	388	97	338	86	225	63	312	88	362	84	400	98	275	37	350	88	362	82
212	412	88	238	55	400	70	312	61	375	85	350	90	338	77	300	84	350	94
213	300	93	375	86	312	79	262	53	312	91	425	78	300	57	450	99	150	14
214	138	18	212	24	375	74	300	77	312	78	400	98	325	87	362	97	173	14
215	262	67	362	93	300	84	425	95	312	86	225	54	350	94	362	100	388	88
216	350	95	350	99	400	100	288	82	312	32	375	90	312	76	462	96	325	98
217	DATA FOR SAMPLE L001																	
218	300	350	180	230	340	420	440	440	410	420								
219	280	370	430	240	260	310	270	280	290	290								
220	330	350	350	200	210	240	230	230	340	230								
221	220	300	200	250	470	290	280	260	310	300								
222	280	320	290	250														
223	162	22	141	11	135	51	133	02	141	23	132	02	144	12	132	14	142	52
224	135	00	130	16	126	18	130	50	145	13	137	00	130	14	146	26	132	62
225	132	16	145	00	143	08	130	03	136	06	130	01	121	67	150	16	126	53
226	132	83	130	20	117	22	109	07	135	04	128	01	123	34	143	03	109	66
227	118	01	112	00	126	08	137	28	115	01	119	14	121	13	116	13	113	02
228	124	10	109	27	119	28	113	04	100	03	121	02	119	47	120	04	113	21
229	100	07	21	12	09	06	14	17	12-06	10	00	12	03	12	05	24	06	
230	14	10	39	08	18	28-01	06	08	08	18	01	07	08	05	05	08-01		
231	18	06	07	12	04-01	11	01	04	12	06	04	05	07-03	17	00	05		
232	100	05	20	32	17	13	07	04	08	31	21	15	05	27	09	18	05	07
233	16	13	30	21	04	13	07	04	03	04	15	10	12	22	15	05	02	10
234	31	12	02	31	06	14	13	20	08	18	15	10	19	08	10	09	03	100
235	13	09	09	13	10	14-01	09	02	14	02	12	02	20	06	20	13	15	
236	11	17	13-04	03	10	11	16-02	01	10	03	03	08	06	12	07	03		
237	06	11	03	16	01	02	20	08	02	08	09-03	16	01	07	100	31	23	
238	10	10	12	03	36	08	18	04	22	06	15	00	10	21	10	42	18-02	
239	09	16	05	04	04	20	07	09	26.17	11	08	06	29	14	03	26	16	
240	09	14	26	06	20	10	14	26	11	06	18	17	100	36	16	19	19-04	

241	45	15	26-02	26	01	26	07	10	28	16	41	23	02	15	13	03	06
242	04	18	06	09	24	20	05	06	09	34	10	02	28	09	11	14	27
243	19	15	13	25	09	13	18	1100	14	22	13	06	29	20	19	00	37
244	10	10	10	09	26	03	29	14	02	15	14	10	05	02	13	11	05
245	24	14	04	04	20	14	03	18	16	10	17	21	04	24	15	21	16
246	09	15	22100	16	26	03	18	17	33	01	26	16	29-01	25	22	11	
247	15	31	09	07	08	10	09	16	04	09	26	09	14	12	09	10	15
248	15	14	08	37	10	10	28	16	13	12	13	04	23	07	11100	22-02	
249	15	08	17-05	14	06	19	04	02	24	24	09	18	06	05	11	11	06
250	03	11	16	07	13	11	09	03	10	06	09	11	04-02	11	05	12	10
251	08-01	03	15-06	15	08	01100-03	17	08	36-04	08	02	23	03				
252	27	19	11	11	21	03	12	08	06	08	07	05	02	22	13	20	16
253	02	09	08	13	07	03	33	09	09	23	10	10	08	05	07	24	10
254	100-07	18-02	20	12	33-05	10-02	01-05	02-03	04	06	04-02						
255	-01	02	05	04-02	01	04-01-05	06	07	00	00	01	05	04	00	02		
256	02	03	01	02	04	00	01	02	00100	11	26-02	28	02	24	04	12	
257	25	16	44	23-03	19	12	05	02	07	25	05	12	31	20	08	11	07
258	32	13	02	33	12	12	14	28	08	27	16	18	29	10	10	20	16100
259	12	16	30	17	07	02	05	17	06	11	17	11	05	09	04-02	03	14
260	08	03	11	16	04	00	07	17	13	05	15	04	14	07	15	08	10
261	11	12	09	11	15	08100-01	21	02	36	05	26	30	17	26	28	06	
262	12	02	09	14	11	10	10	30	11	18	09	04	09	16	11	06	19
263	36	08	09	26	14	17	09	16	02	25	03	08100	14	21	02	37	02
264	-04	03-02	02	10	00	03	02-02	08	04	02	00	02-05-01	01	07			
265	-01	05	05	03-01	05	01	00	00	03	01	04	00	02	06	04	04100	
266	21	19	08	11	31	12	26	27	13	11	12	17	12	11	14	13	17
267	21	13	06	14	19	17	08	19	20	19	23	20	20	30	19	20	30
268	18	13	20100	00	16	04	07	04-01	09	03	08	07	02	00	04	06	
269	10-02	08	06	03-01	10	06	07	07	04	02	02	02	09	05	02	05	
270	07	04	05	02	05	03100	10	24	27	24	24	33	14	05	06	16	18
271	15	04	11	28	11	15	06	06	17	12	14	06	20	03	29	12	08
272	18	14	08	14-01	28	00	04100	07	03	16	02	03	06	00-01	09		
273	04	09	00	02	01	00-02-02	05	12-02	09	06	03-04	00	09-01				
274	-02	07	04	01-04-02	02-01	01100	13	14	16	30	04	08-01	03				
275	08	14	01	04	27	08	13	10	04	12	10	15	05	10	03	32	13-01
276	26	11	16	08	06	06	26-03	07100	16	27	21	04	08	07	09	10	
277	08	16	09	16	16	18	11	04	07	15	09	09	13	16	19	12	19
278	19	10	13	17	08	13	14	16100	16	22	18-06	03	12	02	14	02	
279	14	12	10	04	03	00	29	08	10	10	07-11	16	04	08	19	04	03
280	01	11-08	20-01-04100	23	04	09	12	08	10	05	16	14	13	22			

281	16 08 11 11 34 19 03 30 16 16 18 22 14 18 14 16 30 09
282	13 14 10100 10 08 07 16 16 14 06 12 30 15 17 16 14 23
283	19 04 09 21 15 36 14 09 33 23 18 17 17 04 33 04 14100
284	00 00 03 00 11 00 04 10-02-04 04-05 07-01-02 08 02-06
285	08-04 03 14 01-02 06 02-01 13 04-04100 23 02 05-06 21
286	07 08 27 26 11 18-05 11 17 11 11 18 00 13 20 02 23 14
287	24 10 21 01 15 18100-10-10-10 24 04 06 23 20 16-03-09
288	05 08 16 03 07 05 06 24 01 13 06 17 15 15-01 21 13100
289	56 29-14 22 15 01-01 09 31 30 05 22-07 18 22 18 16-10
290	17 19 22 11-05-14 19-23 10100 36-16 15 17 01 04 17 29
291	28 10 17-11 18 20 20 15-10 21 17 24 06-02-13 18-29 13
292	100-19 04 22-04 02 16 18 48 09 11-04 19 05 20 10-10 20
293	10 12 03 01-13 28-22 04100-04 04 34 23 13-06-14 19 06
294	17 06 13-01 10 45-03 15 02 16 26 24-08 35 08100 11 04
295	-01 00 16 16 02 17 09 04-05 09 12 02 12 14 10 05-01 02
296	15-01 01100 04 18 15 15 25 15 15 10 18 10 50 18-02 44
297	15 21 12 11 01 43-10 08100 36 19 10 00 31 20 12 22 14
298	04 17 46 02 27 18 23 26 19 00 27 22100 17 07 01 13 20
299	14 11 28 11 20 28 13 25 17 24 15 23 08 18 26100 19 12
300	07 16 16 04 22 14 12 14 11 13 14 19 07 17 11 04 13100
301	22 09 22-04 20 24 13 23-01 13 29 25 14 00 03 11-15 28
302	100 18 14-09 27 12 25 13-08 22 12 14 06 06-12 28-24 05
303	100 15-04 48 15 18 18 34 12 25 22 10 44 04 15 11 10100
304	10 16 21 08 20 15 11 26 20 37 08 12 08 02 20100-16-03
305	14 08 23 13 07 00 09 10 14 08 15-01100 19 21 19 14 17
306	21 19 12 28-06 18-04 14100 08 24 10 06 24 28 37 08 25
307	00 01 37100 11 02 52 14 18 05 15-02 49-05 08100 15 11
308	31 54 22 11 14 13 08 23100 01 29 10 21 38 27-07 46 15
309	100 16 19 10 19-10 51-08 00100 39 33 17 21 11 15 42100
310	26 13 10 15 00 30100 11 32 03 15 40100 13 15 24 07100
311	-06 36 30100-05 02100 09100

APPENDIX C

F-TEST SIGNIFICANCE LEVELS, GROUP MEANS,
AND RANGE TEST RESULTS FOR PRCI AND
DEMOGRAPHIC VARIABLE COMPARISONS

APPENDIX C

F-TEST SIGNIFICANCE LEVELS, GROUP MEANS, AND RANGE TEST RESULTS FOR PRCI SCORE AND DEMOGRAPHIC VARIABLE COMPARISONS

I. Rank

Index	Significance Level of F-test	Group Means and Range Test Results ^a			
EROSN	$p < .0001$	EM 2.76	> NCO 1.75	> OFF 1.32	
RACSOL	$p < .0001$	EM 2.90	> NCO 2.70	~ OFF 2.65	
HOST	$p < .0001$	EM 2.34	> NCO 2.08	> OFF 1.80	
COMM	$p < .0001$	EM 2.73	> NCO 2.38	~ OFF 2.27	
COMMD	$p < .111$	EM 3.27	~ NCO 3.32	~ OFF 3.13	
PACSEP	$p < .554$	EM 3.34	~ NCO 3.35	~ OFF 3.31	

II. Age

EROSN	$p < .0001$	LE 19 2.76	~ 20-21 2.75	~ 22-23 2.73	> 24-29 2.17	> GE 30 1.70
RACSOL	$p < .0001$	LE 19 2.89	~ 20-21 2.83	~ 22-23 2.97	~ 24-29 2.90	> GE 30 2.67
HOST	$p < .0001$	LE 19 2.32	~ 20-21 2.36	~ 22-23 2.34	> 24-29 2.13	> GE 30 2.02

(continued)

II. Age (continued)

Index	Significance Level of F-test	Group Means and Range Test Results				
COMM	$p < .0001$	LE 19 2.71	~ 20-21 2.72	~ 22-23 2.75	> 24-29 2.53	~ GE 30 2.38
COMMD	$p < .612$	LE 19 3.27	~ 20-21 3.27	~ 22-23 3.24	~ 24-29 3.18	~ GE 30 3.31
RACSEP	$p < .475$	LE 19 3.29	~ 20-21 3.35	~ 22-23 3.41	~ 24-29 3.38	~ GE 30 3.32

III. Time in Army

EROSN	$p < .0001$	1-2 2.79	~ 3-4 2.69	~ LT 1 2.57	> 5-10 1.90	~ GE 11 1.78
RACSOL	$p < .0001$	3-4 3.01	~ 1-2 2.96	> 5-10 2.75	~ GE 11 2.70	~ LT 1 2.66
HOST	$p < .0001$	3-4 2.41	~ 1-2 2.37	> LT 1 2.18	~ GE 11 2.09	~ 5-10 2.02
COMM	$p < .0001$	1-2 2.71	~ LT 1 2.70	~ 3-4 2.65	~ GE 11 2.45	~ 5-10 2.44
COMMD	$p < .539$	LT 1 3.25	~ 1-2 3.27	~ 3-4 3.24	~ 5-10 3.20	~ GE 11 3.34
RACSEP	$p < .0001$	3-4 3.48	~ 1-2 3.45	~ 5-10 3.34	~ GE 11 3.32	> LT 1 3.06

IV. Time on Post

EROSN	$p < .0001$	3-6 2.64	~ LT 3 2.58	~ 7-9 2.55	~ 10-12 2.40	~ GE 13 2.35
RACSOL	$p < .523$	7-9 2.91	~ 10-12 2.86	~ GE 11 2.85	~ 3-6 2.81	~ LT 3 2.79
HOST	$p < .250$	7-9 2.31	~ GE 13 2.26	~ 10-12 2.26	~ 3-6 2.26	~ LT 3 2.16
COMM (continued)	$p < .051$	3-6 2.72	~ 10-12 2.69	~ 7-9 2.68	~ LT 3 2.66	~ GE 13 2.55

IV. Time on Post (Continued)

Index	Significance Level of F-test	Group Means and Range Test Results				
		7-9	10-12	7-9	3-6	LT 3
COMMD	$p < .378$	3.34	3.30	3.30	3.23	3.20
RACSEP	$p < .0001$	GE 13 3.48	10-12 3.38	7-9 3.36	3-6 3.28	LT 3 3.02

V. Time in Company

EROSN	$p < .483$	3-6 2.52	7-9 2.49	LT 3 2.47	GE 13 2.45	LT 3 2.35
RACSOL	$p < .671$	7-9 2.88	10-12 2.87	3-6 2.86	GE 13 2.84	LT 3 2.81
HOST	$p < .135$	7-9 2.30	GE 13 2.29	10-12 2.23	3-6 2.23	LT 3 2.17
COMM	$p < .131$	10-12 2.71	3-6 2.68	7-9 2.67	LT 3 2.62	GE 13 2.55
COMMD	$p < .136$	7-9 3.35	LT 3 3.32	3-6 3.25	GE 13 3.22	10-12 3.16
RACSEP	$p < .0001$	GE 13 3.50	3-6 3.39	7-9 3.35	10-12 3.29	LT 3 3.07

VI. Reenlistment Intention

EROSN	$p < .0001$	NO 2.83	>	? 2.49	>	YES 1.87
RACSOL	$p < .0001$	NO 2.94	>	? 2.80	>	YES 2.69
HOST (continued)	$p < .0001$	NO 2.36	>	? 2.24	>	YES 2.06

VI. Reenlistment
Intention (continued)

Index	Significance Level of F-test	Group Means and Range Test Results				
		NO		?		YES
COMM	$p < .0001$	2.64	~	2.74	>	2.43
COMMD	$p < .338$	3.29	~	3.27	~	3.25
RACSEP	$p < .002$	3.43	>	3.29	~	3.26

VII. Education

EROSN	$p < .0001$	LHS 2.82	>	HS 2.52	~	SoColl 2.44	>	Coll 1.71
RACSOL	$p < .016$	SoColl 2.93	~	HS 2.86	~	Coll 2.76	~	LHS 2.74
HOST	$p < .001$	LHS 2.36	~	SoColl 2.31	~	HS 2.23	>	Coll 2.02
COMM	$p < .0001$	LHS 2.79	~	SoColl 2.67	~	HS 2.62	>	Coll 2.40
COMMD	$p < .688$	SoColl 3.29	~	LHS 3.29	~	HS 3.27	~	Coll 3.20
RACSEP	$p < .0001$	SoColl 3.53	>	Coll 3.34	~	HS 3.33	>	LHS 3.11

^aThe format for reporting means and Newman-Keuls range test results for each index indicates which groups are being compared and their respective mean values. The symbol ~ between group identifiers indicates no significant difference between connected groups, while the symbol > designates a significant difference. When bracketed lines are used, the groups outside the bracketed areas significantly differ, while those within the bracketed areas do not.